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California Quail.

Feb. 14, Tilden Regional Park, Contra Costa County, Calif. 1030 Observed 3 ♂♂ and 5 ♀♀ feeding on grass within miniature train track enclosure at South Gate on Grizzly Peak Boulevard. When disturbed by observer returning to car adjacent to this area and by other passing cars, they retreated into brush covering about half the enclosed area.

Feb. 14. Strawberry Canyon, Alameda County. 1124 Flushed 2 birds (1 ♂ 1 prob. ♂) about 30 feet inside eucalyptus grove next to brush patch of Baccharis just east of Grizzly Peak Blvd. opposite the Animal Behavior Laboratory (Two birds seen crossing the road here about two hours earlier). 1150 Inside Behavior Lab. saw 1 ♂ and 1 ♀ cross the road from Bird Pen toward Grizzly Peak Blvd. In the next few minutes a quail was heard calling across the road. Baited a weedy flat area next to bird pen where quail appeared to have come from.

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Strawberry Canyon, Alameda Co., Calif.

Feb. 25. 1700 Observed covey in edge of brush patch on west facing slope west of Animal Behavior Lab. The birds appeared near edge of brush from within the patch, feeding around bases of Bacharis bushes gradually working out into the grassy clearing. Since some were always obscured, number can only be estimated at about 10 ♂♂ and 6 ♀♀; preponderance of males quite definite. Within 10 minutes, the leading birds had worked out about 20 feet from the edge of the brush; at this time I noted several in a head-up alert posture, not feeding, then a small hawk broke from eucalyptus grove up the hill and soared down the hill at about 30 feet altitude, and entered the brush. All quail had disappeared when I again looked toward where they had been. The hawk (probably Sharp-shinned) flew out of the brush and up the hill again after about two minutes, apparently having failed to make a catch. At 1725, I procured some grain (Hen Chow) from the Lab., and spread it in the area the quail had been feeding. Three quail flushed from

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Strawberry Canyon, Alameda Co., Calif.
Feb. 25 (cont.) grass clumps about 5 feet out from the edge of the brush, flying only a few feet back into the brush.

March 4, Hastings Reservation Monterey County, Calif. 0655 Flushed small covey in draw in back of Davis house, at edge of chamise brush (lower side) in small grassy patch. Birds flew up and then down into brush.
0700 At edge of chamise could hear birds "talking" not far inside brush patch.

March 5. Hastings Reservation, Monterey County Calif. 0610 Heard single call from trees in back of Davis house, followed by "Talking" from within trees where birds where apparently roosting. 0618 Began to hear birds flying, either disturbed or leaving roost. By 0630 no further sounds of birds in trees.
0745 Heard several calls while eating breakfast; some birds feeding just outside house (out of sight). Noted four, 2 singles, one pair, moving down slope toward grassy field. 0752 In front (downslope) of Davis house, one male flew from lower to higher perch

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March 5. Hastings Reservation.
in large Monterey Pine, remained standing on limb next to trunk. ~~0~~856 This bird flew up valley across open field following 3 others heard to fly but not seen. Several calls heard from direction they flew; localized in _Ceanothus_ thicket at edge of oak-chaparral and grassy field. 0828 Observed covey of 8-10 birds in open _Ceanothus_ thicket

March 6, Hastings Reservation, Monterey Co.
0607 Heard several calls as soon as I left Davis house in gray dawn - only eastern sky beginning to be bright. 0619 Covey glimpsed in ground in and around brush in roost area. 0700 Observed covey briefly before it went into chamise on water-tower hill near roosting site, definite count of 10 birds, 2-5 probable additional in brush. 5 males in one group close together, none in pairs. 0925 Again observed covey in open brush - 8 birds counted. 4 (2 ♂ 2 ♀) remained standing in a clearing for a few minutes. Calls were ~~heard~~ from two different locations, after which 1 ♂ + 1 ♀ moved uphill into brush, followed by the other pair within one minute. 0927 Two more birds

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Mar. 6. Hastings Reservation, Monterey Co. walked across clearing uphill following route of previous birds.

1152 Counted 7 quail crossing clearing in chamise slope just south of "Quail Hollow" (roost area). Also heard quail "talking" and rustling leaves; may have been whole covey.

Took station on hillside near roost area about 5 p.m. and waited for birds to come to roost. At 1812 most of the covey passed within 20 feet, along edge of clearing, led by 4 males; apparently catching sight of me, they flew at once into roosting trees, scattering into 2 or 3 oaks. About 3 to 5 other birds trailed at a distance & were not clearly seen, but were definitely not in pairs.

March 7. Hastings Reservation, Monterey County. 0655 Quail covey feeding on grassy bench immediately back of Davis house. As I was proceeding up the road to red house, on s-west side of this area, first indication was an alarm call after which the covey of 12-14 birds took

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Mar. 7. Hastings Reservation Monterey Co, flight into adjacent brush. 3 birds remained on the ground - 1 ♂ and 1 ♀ (about six feet apart) in open and 1 ♀ under a shrub. after a minute these all walked into the brush. 0705 After leaving area briefly returned to observe 14 quail (7 each sex) feeding same place. Sexes almost randomly distributed but two pair observed feeding close together and somewhat apart from main group. 0708 Birds took alarm and ran and flew back into brush; a few seconds afterward a single bird (watchman?) flew from an isolated shrub at edge of feeding area into the brush. 0712 One or more birds flew from clearing under oak trees back toward brush. Observed 2 ♂♂ followed closely by 2 ♀♀ feeding in this same clearing, walking off toward abandoned shack. Also heard several birds flying (probably same ones). Several alarm calls heard, following by "talking"

— McMillan Ranch, San Luis Obispo County. 1345 Heard quail calling in Marion Springs Canyon. Single male

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March 7. McMillan Ranch, San Luis Obispo Co. walked down brushy slope across canyon and sat down near edge of stubble field. 1405. Just over ridge of brushy hill from spring, flushed 30-40 birds of covey fairly (well concentrated in brush. On next slope over, saw a pair together on the ground.

1730 Baited feeding area in front of house. Observed a pair on the road, another in back of house. By 1800 something over 50 birds were feeding together (accurate count impossible because birds were continually moving into + out of brush) in very nearly equal sex ratio. Among early arrivals, many arrived in ♂-♀ pairs (at least 4 pair in first dozen birds). Pairs did not remain together while feeding; about 3 pairs remained outside the covey and always in pairs. 1805 Counted about 60, after which about 10 moved away towards roost area, and 10 moved in from brush. 1806 More birds moving in from brush — all these randomly mixed as to sex. 1808 Still more additions — groups of 10 - 12 birds.

Shifted to observing roost area

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March 7. McMillan Ranch, San Luis Obispo County.

From window of unlighted room. Counted 19 apparent pairs and 42 unpaired birds ~~pairs~~ coming into roosting area. With larger numbers & deepening dusk was unable to distinguish pairs, counted a total of 182 birds going to roost between 1820 and 1830. At least loose pair bonds seem to be formed in about 1/2 the birds.

March 8. Awakened a little before 6 a.m. by quail noises in roost just ~~outside~~ outside of my bedroom window, and looked out to see quail leaving roost — mostly in straight and nearly level flights. Some quail feeding on ground near the roost, the majority on baited area in front of the house. Almost continual calling by several birds. Apparently all birds out of the roost by 6:10. I opened a noisy door at 6:15 and stepped out, with an immediate clamor coming from dogs in two pens, and all quail scattered rapidly including those out of sight

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March 8. McMillan Ranch, San Luis Obispo Co. in front of the house. 0620 Observed a group of about 30 in clearing around windmill, about half staying in pairs (4 pairs well separated from others.)
0625 Single pair feeding in front of house. Four pairs in pasture west of house, all well separated, ran into brushy enclosure around house. Two large groups flew from brush piles in this pasture as a Marsh Hawk & two ravens flew over lower end. A group of 14 birds remained near one brush pile on ground, including 2 pairs very little separated; all 14 flew towards brush enclosure in a group as I approached.
1000 In passing row of <u>Atriplex</u> in the "Willows" area, observed a covey feeding near the edge. One bird made a typical chase of another. Later observed a solitary pair along roadside near ranch house. ~~0645. Eight birds feeding in same area separated into 4 distinct pairs, one pair moving into brush, a second moving~~ to

California Quail.

March 9. McMillan Ranch, San Luis Obispo County. 0615 Awakened by quail calls and observed covey feeding as a group in front of house. 0638 Saw two pairs, one feeding in front of house, one pair near water pool; the hen of the latter pair was standing about 2 feet from the pool, while the cock was standing on the rocks at the pool edge. He then walked toward the hen slowly, and with no preliminaries stepped on her back and attempted copulation. The hen did not squat or make other response and he stepped off in a few seconds, and both wandered into the brush. 0645. Eight birds feeding separated into 4 distinct pairs. One pair retreated into brush, a second to the far side of the feeding area, and the other two pairs remained close together, than drifted apart by pairs. A few other birds joined or left these pairs, with two instances of one cock briefly threatening another; main body of covey was not in this area. 0700 In rear of house observed 4 separated pairs feeding; a cock in same

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March 9, 1963. McMillan Ranch, San Luis Obispo Co. clearing, and a hen the other side of the fence in corral area, enclosed by wire mesh at bottom, were apparently paired, the hen looking for a way through the fence, and the cock, after running about randomly, flying up to the top of a basketball standard. Three other pairs observed coming down from stubble hillside, then several separated birds, gradually aggregating into a compact group.

March 12. Strawberry Canyon, Alameda County. 1630 Checked trap near Behavior Lab; contained one Brown Towhee and a pair of quail which escaped from Bailey trap as I was removing them for banding.

March 13. Strawberry Canyon, Alameda ~~Canyon~~ County. 0835 Checked trap - no quail, grain not eaten around trap.

March 14. 1545. 4 ♀♀, 2 males in trap.
Banded imm. ♀ Pink
imm. ♂ Red.
imm. ♀ Light Green.
imm. ♀ Yellow

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March 14. Strawberry Canyon, Alameda County.
Adult ♀ - Blue.
Two birds escaped when I failed to keep gunny sack tightly closed, one male escaped by pushing over net at exit tunnel. Remaining 3 birds released in bird pen in Behavior Lab. All were able to fly and struck fence just once, then walked around edge of enclosure, + took cover in weeds.
1630 Read + emptied rain gage - 0.07 in.

March 15. Strawberry Canyon, Alameda County. 0825. Checked penned birds; ♂ Red and ♀ Pink were sitting in grass a few inches high next to southeast fence; ♀ Blue later flushed from tall grass and weeds near east corner of pen. ♀ Blue flew into fence twice before joining the other pair.
1555 Red ♂ and Blue ♀ walking around close together; ♀ ran around obs. hut, and ♂ ran rapidly after her, and they disappeared in tall grass + weeds. Pink ♀ appeared in same corner after 3 minutes as I entered enclosure to scatter grain, then flew down hill + bounced off pen top, to the ground.

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Strawberry Canyon, Alameda Co., Calif.

Mar. 15. Six ♂ and one ♀ in trap, plus a pair in Bailey trap. Banded:

Imm. ♂ - Dark Green.
Imm. ♂ - #56601
Imm. ♂ - 56602
Ad. ♂ - Orange.
Imm. ♂ - 566 08 (Bailey trap).
♀ escaped from insecurely closed Bailey trap.
Ad. ♀ - Black.
Ad ~~Imm~~. ♂ - 56603 (Kept in pen)

1645 Released 4 birds in pen in Behavior Lab: Dark Green, Orange, Black, and 56603 Al. Birds flew against fencing once, then walked around edge - looking for opening.

March 16. Strawberry Canyon, Alameda County. 1400 Observed penned birds. Males 03 and Dark Green patrolling fence, later joined by another male in far corner. Pink ♀ near obs. but walked unsteadily into tall grass & hid. She remained motionless when I approached until I could almost pick her up, then ran away slowly & unevenly away - she may be sick or injured. Males observed eating leaves of vetch, soon they stopped & stood motionless, hunched up into round balls with feathers well-fluffed

BIRDS in PEN

		Color	Date
	Ad. ♂	Orange	3-15-63
	Ad. ~~♂~~ ♀	Black	3-15-63
X	Ad. ♀	Blue (d. 3-18-63)	3-14-63
	Ad. ~~♀~~ ♂	56603	3-15-63
	Imm. ♂	Red	3-14-63
	Imm. ♂	Dark Green	3-15-63
X	Imm. ♀	Pink (d. 3-17-63)	3-14-63
	Imm. ♀	Yellow	3-18-63
	Ad ♀	56605	3-18-63
	Imm. ♀	Blue (d. 4-19-63)	3-19-63

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March 16. Strawberry Canyon, Alameda County, Calif.

out; sky completely overcast at this time. Orange + red males also noted, no females accompanying any of the males.

1745. Banded quails from trap: -

Ad. ♂ 56604

Ad. ♀ 56605

Ad. ♂ 56606

Imm. ♂ 56609

In pen 4 ♂ and 1 ♀ were patrolling back + forth along upper fence, apparently looking for an opening

March 17. Strawberry Canyon, Alameda Co.

1410 Five birds flushed from small shrubby eucalyptus directly in front of observation window. Pink ♀ found dead on ground with back of neck opened to spinal column. Band removed. 1445. Two males standing motionless in N corner of pen, other birds under cover.

Mar. 18. Strawberry Canyon, Alameda Co.

0840 About 5 birds in trap; exit net insecurely fastened allowed all but one to escape. Recapture ♀ 56605 removed to pen in Behavior Lab. Two ♂ and Black ♀ patrolling upper fence.

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Strawberry Canyon, Alameda Co., Calif.

March 18. 1430. One ♂ + one ♀ patrolling SW fence (colors not seen). Two ♂, DR Green and Al 05, flushed from Eucalyptus in E. corner, a ♂ + ♀ also ran from this shrub (prob. not same two formerly seen this afternoon.) Found Blue ♀ dead beneath same brush feathers mostly missing from back of head; presumably killed by flying into wire top of pen. By 1500 birds pretty much in cover, only 3 ♂ visible motionless in grass near S. corner.

1820. Banded Yellow one immature ♀ in trap, + released in pen.

Mar. 19. 0830. Two ♂ in trap - banded :-
Imm. ♂ 56601 - Recapture.
Ad. ♂ 56610.

~~13~~1540 - Two quail in trap :-
♂ #56604 - Recapture.
Imm. ♀ - banded Blue.

Released Blue ♀ in pen at base of encalyptus, from being held in hand. This bird did not fly, but remained in cover.

1610 4 ♂♂ patrolling the fence together, all ♀♀ under cover.

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March 21. Strawberry Canyon, Alameda County, Calif. Observations in Behavior Lab. pen: 0845 ♂ and ♀ near gate, one flew into tall grass nearby, one to the far eucalyptus shrub. 5 quail motionless along NW fence, within a space of 10 feet: a single ♂, then 2 ♀♀, then 2 ♂♂. 0900 The two males furthest away fed on green leaves (clover?) for about 1 minute. 1010 One pair along NW fence, no others in sight. 1100 Quail have hardly moved a muscle in this period, still standing in same place, in same position; no others appeared.

1325. 3 ♂ and 3 ♀ along NW fence, moving about slowly. Yellow ♀ feeding on chicken feed in center of pen. She was observed on 2 occassions to pick up a piece of grain (cracked corn?) hold it & then drop it. She then walked slowly into tall grass at base of shrub in front of observation window. 1335. Only one pair remained along NW fence, ♀ Blue and a ♂. 1340 heard low Assembly calls; ♂ was observed to be standing very erect & throat movement observed,

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Mar. 21. Strawberry Canyon, Alameda Co., Calif.
but mouth was not opened to call. After a moment he gave a "Kurr-r" call and ran very rapidly down slope into cover + gave several assembly calls. Blue ♀ remained by the fence + was joined by 2 ♂♂; all remained motionless.

1455. 4 ♀♀ in trap: banded —
Imm. ♀ 56611
Imm. ♀ 56612
Ad ♀ 56613
Imm. ♀ Yellow 1 (recapture).

3 released, Yellow ♀ retained for use of Animal Behavior studies.

1535. Group of birds in E corner; saw 4 ♂♂ at once; this accounts for all 8 birds today.

Population by ratio: 9 banded birds previously released. Captured 1 banded to 3 unbanded, total population 36 birds; ~~[illegible]~~ plus birds not released (10), original 46 birds.

1545. Some antagonism, noted two short chases of one ♂ by another.

1550. Birds commencing to come into the open feeding on grain. Red ♂ and Blue ♀ together (both immature). Yellow ♀ joined them. 1555 all birds became motionless for 7 minutes,

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March 21. Strawberry Canyon, Alameda Co.
after which yellow ♀ resumed feeding for one minute, then remained motionless with the other until a total of 12 minutes had elapsed, then all resumed feeding.

1615. Red ♂ mounted ~~x~~ Blue ♀ as she squatted with wings partly spread, + copulated for about 10 seconds. All three birds then wandered back into thicker grass cover.

March 22. Strawberry Canyon, Alameda County, Calif. 0620 Heard assembly call from a distance, while observing in pen in Behavior Lab. 0710 Since quail in pen have shown no activity and it is an hour past sunrise I am entering pen to determine roosting places. Seven birds ran from vicinity of larger Eucalyptus in E. corner – most first seen on ground; later the last (Yellow ♀) flew from this same bush. The seven remained together while running from me; after I returned to the obs. house, saw 2 ♂ together in the N corner, who flew to cover in tall grass on NE side, where others were last seen. Discontinued obs. at 0730.

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March 23. Strawberry Canyon, Alameda County.

0925. One pair near gate in NW corner, group of 6 along NW fence (may include the first pair). All retreated quickly into cover with no marked disturbance. Attitude very active, not quiescent as it was yesterday.

March 24. Strawberry Canyon, Alameda Co. Observations in Behavior Lab pen 1630 to dusk. Several birds were congregated in the east (furthest) corner, rather quiescent, but with some movement and feeding. 3 ♂ and 2 ♀ feeding in a loose group along SE fence, a pair about 20 feet off. & 8th bird (♀) not seen.
– Blue ♀, another ♀, and O3 ♂ feeding on grain in B7-B8, other 5 birds together along SE fence. Groupings shifting as birds feeding near center of enclosure. When startled (cause unknown) all 8 birds ran through deep grass to fence & along fence to E. corner. Orange ♂ and O5 ♀ patrolling fence together, then all birds disappeared from sight. Sunday afternoon cars and motorcycles along Grizzly Peak Blvd create a disturbance

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March 24. Strawberry Canyon Alameda County.

that is above the quails' level of tolerance. A poor time for observation!

Looking from outside along fence, I could see at least 5 birds in the east corner, while Orange ♂ and O5 ♀ had resumed patrolling. The sun was now low enough that the ground surface of the entire pen was in shadow, although the surrounding trees were still lighted by the sun.

While the ~~Orange~~ O5 ♀ was standing motionless, feathers fluffed out in a round ball, and apparently dozing, the ~~[illegible]~~ Orange male approached from the rear, mounted and copulated. At this distance it was not possible to observe the female's posture after she was mounted; however, the copulation appeared to be complete, lasting about 10 seconds as in the case previously observed.

With sun only on top of trees, 5 birds including both mated pairs ran rather rapidly to center of pen & began feeding on grain and another pair joined them; after less than a minute, the birds again disappeared

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Mar. 24. Strawberry Canyon, Alameda Co.

in cover - disturbance may have been a plane passing over at this time.
By "local" sunset (no sunlight on any objects in vicinity) the birds had not come out. One male was seen sitting on ground, and birds were heard scoring in Eucalyptus in B-7,8.

March 25. Strawberry Canyon, Alameda Co.

0818 As I approached the Behavior Lab. pen, I saw a single male (unbanded) outside the fence, and 5 birds, 3 ♀ and 2 ♂, inside, apparently attempting to get together. As I approached, the ♂ outside ran along the NW fence, those inside ran to the other side of the observation hut, at least 3 going to the NW fence, then resting there. The male outside gave series of clucks as he patrolled the fence, a bird inside gave several "assembly" calls.

0845 3♂ and 3♀ pacing excitedly along NW fence as bird outside gave repeated "assembly" calls, then a single "cow!" call.

Orange ♂ with 05 ♀
Red ♂ with Blue ♀

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March. 25. Strawberry Canyon, Alameda County.
The other pair of birds did not seem to be strongly associated, mixing with the other pair as they ran back and forth. Fourth pair was not seen. By 0900 the outside male had ceased calling, and the birds inside retreated to cover. Ceased observation at this time.

March 25. Hastings Reservation, Monterey County. 1715 Eleven quail foraging on level meadow between Davis and White houses. One pair separated from main group by about 20 feet. A second ♂ approached this pair and was feeding close to the ♀; the first male walked rapidly toward him, and the interloper raised his body nearly vertically + flapped his wings twice; the original male then walked past him to his presumed mate, and fed very close to her, as another pair joined the group - Eight birds, including this group are gradually working closer to the hillside + chaparral cover, the remainder still foraging in the same place

California Quail.

March 25. Hastings Reservation, Monterey County.

1735. Now count 9 in group nearest hillside, 6 in the other group.

1740. Birds were startled (perhaps by magpie cry?) and all flew to cover in Mountain Mahogany tree 20-40 feet from birds. Two ♀♀ feeding further off walked & ran to same tree, and another pair continued feeding. The latter pair and still another female then crouched motionless in the grass ~~and~~ as jays kept up a series of calls.

The birds under the mountain mahogany are essentially invisible, but one bird was seen to hop up into a perch about 2 feet above ground, then move out of sight.

1750. One ♂ and 2 ♀ venturing out of cover to resume feeding, followed by other birds

1754. Birds walked rapidly back under tree, while 5 birds which were not in this group ran from grass to join them under the tree Sun has left the level field and the brushy hill, sunshine only on eastern end of valley.

1805. On closer examination of

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California Quail.

March 25, Hastings Reservation, Monterey Co.

this tree, I could see perhaps half a dozen birds sitting on low horizontal (thick) limbs, or moving about, indicating this and two adjoining oak trees are this night's roost. Total of 15 birds observed, from a covey previously counted at 19, may indicate that two pairs may have left the covey ~~for~~ for nesting.

March 26. Hastings Reservation, Monterey Co.

0540 Heard first assembly call, accented first syllable. By 0600 assembly calls from several directions, but no birds seen until two flushed singly from trees where seen last night and flew to base of hillside, where they commenced feeding near shrubs. a group of five seen in this spot.

0608 a single bird flew from an oak along creek bank 40 feet from the others, joined another under the pines near the house, and fed along base of hill towards brush.

I approached the brush and saw at least seven birds in a group. after a coffee break, at 0645, 12 birds

California Quail

March 26. Hastings Reservation, Monterey County.
were feeding on the grassy slope below brush; a single male, a group of 7, and another group of 4 (2 pairs?). The latter all joined to form a single group. The group was shortly scattered by a pair of magpies, but remained in the vicinity. At 0659 saw a ♀ feeding near the "single" ♂. A moment later all birds disappeared into the brush, no apparent disturbance. Made a circuit of this brushy hill-side, and by 0715 no birds had come into the open, but several could be seen within the open brush. There was ample vegetation in the brush, and I suspect the birds were finishing their meal under cover.

1620. Quail have not come into the open in the field where previously seen. I circled the covey territory, and at 1642 saw several birds run into cover on the brushy slope below the weather station. A break in the clouds at this time gave sunshine in the local area. 1715. Sunshine has gone again. Saw at least 9 quail feeding + moving across opening in brush in vicinity of live oaks. At 1717 they

California Quail

March 26. Hastings Reservation, Monterey Co. began moving into open grassy slope above the path. An isolated pair along the path, 1740. After having been feeding in clearings in the brush, the whole covey of 15 birds crossed the path at the base of the shrubby hill + began feeding on the open grassy slope. At 1747 all birds flew back to nearest shrubbery, with no apparent cause for alarm.

March 27, Wednesday. Hastings Reservation, Monterey County. At 0600 no quail were seen in the open in the usual feeding places. 0611 Heard and saw several quail in + around large *Ceanothus* bush in "Quail Hollow", which ran + flew into surrounding brush. Two quail flew from perches about 15' up in adjoining oak. Apparently the birds had not yet left their roost, although it was quite light + warm. I circled the covey range at a distance, but no quail left cover; then I explored the brush and found several quail in and around the roosting bushes at about 0700.

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March 27. McMillan Ranch, San Luis Obispo County, near Shandon, Calif. 1715 After circling the slope of Pole-Line Ridge above Marion Spring, and noting that no quail were feeding in open area, I disturbed an indeterminate number in the brush just uphill from the spring. In most cases I only glimpsed one or two birds running through the brush, and never flushed a larger group. One male violently chased another bird (which appeared to be a female - ?) in flight, and down into a gully, giving loud "Psew-psew!" calls. Two such flights occurred, and the calls continued for a minute after they flew out of sight. Apparently the covey bond has pretty well disintegrated in these birds. At 1740, returning to the ranch house, I saw a group of 30 or more fly into shrubs around the house. At 1800, after grain was scattered for quail in back of house, large numbers of quail gathered, starting with about 50 already in the area and building up to about 150. Almost all birds joined the group in pairs, indicating that formation

California Quail

March 27. McMillan Ranch, San Luis Obispo Co.
of pair bonds is essentially complete in this covey. However, no antagonistic behavior was noted; of the single birds joining the covey, as far as I could determine, the great majority were females, which would explain lack of antagonism in males.

March 28. McMillan Ranch, San Luis Obispo County.
At 0525 heard calls from roosting quail in artificial roosts. A few birds were seen on the ground (from bedroom window) and in a few minutes birds began to fly steadily down from roosts to the ground. Almost all were single, made a straight slanting flight to open ground and then ran rapidly to the cover of brush patches. Most of the birds seemed to be down by 0547, but 3 were seen to fly back up into the roost. Assembly calls continued beyond this time.

On the ground, in apparent response to the wet windy weather, most of the birds congregated in groups under and around individual thick shrubs. Further movements of birds were usually in pairs.

0615. One pair observed copulating - a second male walked up behind the

California Quail

March 28. McMillan Ranch, San Luis Obispo County.
pair and nudged the copulating male, who appeared to have completed copulation; all three walked off, the ♀ ruffling her feathers. 0620 a group of 40 birds feeding in lot in back of the house were nearly all associated in pairs, with additional pairs ~~in~~ in surrounding area. Observed one spirited chase of one male by another.

I then walked up road to the old house, and saw many quail in pairs & groups – as the groups flushed, they were never in larger bunches than 12, more usually only 2 or 3 pairs together. Feeding groups were correspondingly scattered.

Started 0900 on trip by pickup to various quail areas. Heard a "cow" call in Gillis Canyon, saw a male on fencepost, not calling, in lower Gillis Canyon, another in lower Camatti canyon. A third male at 0935 in middle Camatti, not calling; another ♂ flushed from fence-row, and cow-calls heard regularly from the other side of the Canyon. A short distance further saw a ♂ on one fence-post & a ♀ on a nearby post, while another

[illegible]

California Quail

March 28. Camatti Canyon, San Luis Obispo County. pair flushed from the fencerow.

McMillan Ranch. 1750 observing covey feeding in back of house. A group of 25 birds flew to the house almost colliding with the pickup as we drove up. After baiting the area back of the house, nearly two hundred birds congregated, coming in pairs or flying in groups usually of 10 to 12. Two or three short chases were noted, one by a ♀, the others in the midst of a dense feeding group and probably related to feeding conflict. At 1807 4 males made a sustained chase of a female who dodged back + forth through the feeding birds; after the other males ceased chasing, one continued, for a total of the better part of a minute. At about the same time 3 other males chased females for only a few seconds. This was definite chasing, not merely running together to a food supply, as evidenced by the entirely different attitude of the birds.

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March 28, McMillan Ranch, San Luis Obispo Co.
1827 Quail started going to roost in oaks and artificial roosts; occassional short aggressive episodes.

March 29, McMillan Ranch, San Luis Obispo Co.
at 0515 heard "~~Peen-peen~~ squill" calls of anger from roost near house. I did not wake again till 0545, when a series of assembly calls were heard and quail (apparently the last) were seen leaving the roost — one bird flew back up into the roost; several birds on the ground congregated near individual shrubs. Watched birds dispersing from roosting area between 0610 and 0620. The birds left the area in pairs almost without exception and walked out into the pasture or up the hillside south of the road. Two lone males were heard giving "Cow!" calls, interspersed with "assembly" calls, from perches on fence posts; twice, the cow-calls were answered by a series of angry "~~Peen peen~~ squill" notes from birds on the ground (out of my sight), both times with only one crowing male

California Quail

March 29. McMillan Ranch, San Luis Obispo Co.

in sight, so that it is possible one of these males was attempting to join a mated pair, & eliciting the aggressive response from the mated male.

0915. Left the house at 0830 and walked to Marin Spring & up the hill toward Pole-line Ridge. Heard frequent widely scattered assembly calls interspersed with occasional "Cow!" calls. In criss-crossing the lower part of this slope I started only one quail, a ♂ which ran uphill across a juniper clearing into low brush. Along with "Cow!" calls I twice heard "Pew pew!" responses.

1000: Proceeding around the end of Pole-line Ridge, I heard almost continuous assembly interspersed with "Cow!" calls. As I moved into upper Portugee Canyon, with very steep brushy slopes on both sides, I heard no calls of any kind, but one bird flushed silently near the stream bed and flew uphill a short distance.

1100 While watching the presumed coyote den from the west slope of

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California Quail

March 29. McMillan Ranch, San Luis Obispo Co.
Portugee Canyon, I heard numerous assembly calls, clucking notes of several quail, and aggressive "Psew-psew!" notes, the later twice from 2 birds at once, suggesting active fighting. 1115. The same birds, presumably, have been staging a calling duel for about 15 minutes across the canyon, one bird alternating a "Cow!" call, sometimes two, once up to four, with a series of assembly calls. 1119. Only one bird heard in a long series of "cow" calls, most spaced 8 seconds, a few a little longer, for a total of 12 calls.

1637. First pair of quail appeared on feeding ground in back of ranch house, almost at once retreated into brush.
1652. Baited feeding area with grain.
1655. Two pairs emerged from weedy area behind windmill & began feeding, soon joined by the first pair which again emerged from cover.
1722. Heard assembly calls from several directions. 1733 additional pairs coming in from the canyon increased number to 18 feeding together.

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California Quail

March 29. McMillan Ranch, San Luis Obispo Co. 1734. Heard "squill" call, more birds coming in. By 1810 had counted, with some inaccuracies due to movement of the birds, 50 pairs and 4 lone cocks; with some birds missed, and a few moving out of the area, I estimate the total number at 120, compared to an estimated 200 last night. Around 1800 observed about 3 rather intensive chases, one in the air with a ♂ chasing a ♀; and heard many "squill!" calls, which had been absent in the earlier feeding. No groups flew in from the hillside as occurred yesterday. Presumably the reduction in total number is due to the fact that more distant pairs are roosting in the nesting area rather than returning here. Aggressiveness as such were evident today; at least one male giving "Cow!" call in the feeding area; and pairing seems to be essentially complete.

March 30. McMillan Ranch, San Luis Obispo Co. Heard several "squill" notes from the roost at 0445, then quiet until at 0500 there began a con-

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California Quail

March 30, McMillan Ranch, San Luis Obispo County, California.

Variations of assembly calls, cluckings, and some "squill" notes, as the birds stirred around and began to leave the roost. First bird was seen to fly down at 0510, most were out by 0520. The birds left the roost singly, with a few seconds separation between birds, some flying to the ground, more flying off nearly level to a more distant spot, and a few flying into adjacent trees first. The assembly calls attained a maximum right after this, and died down as, apparently, the birds located their mates. About 80 birds fed for a while in back of the ranch house, but gradually scattered by pairs, walking off up the hill to pasture or stubble fields, or into the weeds along the canyon; one group of four pairs flew from this area into the enclosed area in front of the house. Two lone cocks were seen, and also two lone hens, the latter apparently found their mates after a short time. By 0530 the only

California Quail

March 30. McMillan Ranch, San Luis Obispo Co. quail left in sight were 4 pairs 'feeding', which I should judge were those first seen at the evening feeding last night and whose nesting territory is probably close by; a lone male which ran down the road after sitting on a fence post and calling for several minutes; and a second lone male giving alternate "cow!" and assembly calls from a perch on the cattle chute by the road.

March 30, Strawberry Canyon, Alameda Co. 1700 Scattered a can of chicken feed. Seven quail together in the N corner of the pen.

March 31. Strawberry Canyon, Alameda Co. 1540. Group of at least 5 quail in N corner of pen in behavior lab. partially concealed by weeds. Crouched motionless. At 1600 I walked around pen; 7 birds walked from N to E corner, then returned as I came near east corner. As I approached them, they were partially concealed in a thick patch of <u>Medicago</u>.

California Quail.

March 31. Strawberry Canyon, Alameda Co. 5 birds walked away from me into the open & I could identify ♂♂ Orange, O3, and Dark Green, and ♀♀ Black and Blue. These 5 then flew down to the opposite corner, followed by another ♀, probably O5, mate of Orange ♂. As I approached the edge of the *Medicago* patch, another ♂ flew out (Red, by elimination), then the last ♀ (Yellow, if above guess are right) when I stepped into the patch. Red ♂ & Blue ♀ mated 10 days ago, yet did not appear together today. Yellow ♀ as always is last to flush and stays closest to cover – today also was associated with Red ♂.

April 1. Strawberry Canyon, Alameda Co. 0814 Red ♂ and a ♀ resting next to NW fence in pen; a ♀ perched on one leg on a box in shade of small *Eucalyptus* shrub, in area C-7. When I entered the pen to service the recorder at 0825, the above ♀ retreated into cover, and 2 pairs, including that noted along NW fence, ran down the NE fence line. The

California Quail

April 1. Strawberry Canyon, Alameda Co., Calif. - remaining three quail were not seen. This is a little more tendency than previously seen to stay in pairs, but still not very marked.

April 2. Strawberry Canyon, Alameda County. No activity of quail in pen from 0614 to 0714, at which time I walked around outside the pen, but could still see no quail out of cover. Still no action by 0814 so I entered pen + flushed birds from Eucalyptus in E-8. 4 ♂♂ flew out together, then 2 ♀♀, and another ♀ from tall weeds. All ran out of sight immediately in grass + weeds.

April 4. Strawberry Canyon, Alameda County. 0825 Arrived at pen in Behavior Lab., only 2 quail visible - both ♀♀ sitting at edge of bur clover along NW fence.
0905 2 pairs and 1 ♀ flushed from bur clover patch along NW fence.
0913 Counted all 8 birds in E corner, and along SE fence, generally moving in pairs. 1050. Quail calling outside the fence, assembly call distorted with more emphasis on final "caw!"

California Quail

April 4. Strawberry Canyon, Alameda Co. Quail in pen active, running about with some feeding. 1057 Heard the aggressive "Psew-psew!", seemingly from within pen. 1102. A lone male seen along outside of NE fence, calling loudly + urgently. An answering call (both "assembly") came from lower part of pen, could be either inside or outside.
1120 Flushed 3 separate pairs from cover in bur clover along NE fence; these pairs were several feet from other pairs. They ran down to corner and along SE fence, where 2 ♂♂ outside the fence engaged in "voice combat" with one, sometimes two males inside. As near as I could tell the "Psew!" calls were from the outside males, as were the assembly calls given a little later; sometimes two "Psew!" calls overlapped, indicating that both birds, in + out, were giving them. 1125 Discontinued observations.

April 6. Strawberry Canyon, Alameda County.
0925 One ♀ flushed from grass near *Eucalyptus*, area C-8, and

California Quail

April 6, Strawberry Canyon, Alameda County. ran down to join 5 others along SE fence, when I entered the pen to check the rain gage. All birds retreated to cover in E corner within 2 or 3 minutes.

April 7, Strawberry Canyon, Alameda Co. 1105 In behavior lab pen, flushed 5 birds in a group, followed in a few seconds by a single ♀, from Medicago patch along NW fence. 4th pair in Eucalyptus in area B-7. Birds retreated to cover & remained out of sight until I left at 1133.

April 8. Strawberry Canyon, Alameda Co. 1620 All 8 quail in pen together in E corner, ran along SE fence in pairs, except black ♀ lagging; pairs remained together in group. 1700 After being quiescent seen last seen, the group of quail in the E corner showed a spurt of activity, with feeding and running back & forth along fence. This lasted only 2 minutes in my view, then they disappeared behind the Eucalyptus shrub. 1720 Entered pen to obtain view behind shrub; all quail standing

California Quail

April 8. Strawberry Canyon, Alameda Co. nearly motionless in E. corner, ran off along NE fence when they saw me at a distance of 100'. I could distinguish 4 ♂♂ and 3 ♀♀ in the group; 2 ♂♂ remained a few minutes after the others ran off. As the pen became shaded between 1730 and 1800, one pair moved out along SE fence, feeding a little, then resting motionless; two males did the same after a few minutes, but all were motionless when obs. ended at 1800. At 1802, on leaving Behavior Lab., a covey of at least 20 flushed just inside the west fence and flew into adjoining Eucalyptus grove and shrubbery.

April 9. Strawberry Canyon, Alameda Co. 1410-1430 Quail in pen bunched and resting in E corner. 1430 One ♀ flushed from mixed weeds in area E-6, joined other birds in E corner. As they ran along SE fence I counted all 8 birds.

April 10. Strawberry Canyon, Alameda Co. 1110 Quail all loafing in E corner of pen in a single bunch.

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California Quail

April 11. Hastings Reservation, Monterey County, Calif. 1730. Saw a few quail running through Ceanothus thicket above Davis house, but was unable to distinguish whether it was one or two pairs, or an unpaired covey. 1820 Saw the covey on the grassy plot just above Davis house, and counted 13 birds as they ran into the brush, also heard another pair in oak grove adjacent.

April 13. Strawberry Canyon Alameda County. 0750, Six quail flushed from Eucalyptus (in Behavior Lab. pen) in area B-7, one flew to E-9 Eucalyptus, the others to the ground in the E. corner (E-10). During undisturbed observation until 0830 the birds remained out of sight in this area. I then entered the pen to get in position for a better view and saw all 8 birds, who ran back and forth when I came in sight. They were not in obvious pairs but remained well-bunched. The Black ♀ tended to remain by herself rather than to follow the others when the group ran off a short distance. Left at 0840.

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California Quail

April 14. Strawberry Canyon, Alameda County. 1608 Birds in Behavior Lab pen all out of sight under cover, after a day of frequent and sometimes heavy showers. I entered the pen and saw a pair ♂ in the east corner (E-10) who ran along SE fence to the south corner (A-10). Five birds then flushed from the tall grass in E-7, only when I came within 3 or 4 feet, having previously passed about 8 feet away; of these, I observed 3 ♂♂ and one ♀ in the north corner together before they ran down the NE fence line. I also noted a single ♀ in the east corner after the other 7 noted above had left this area. Another shower started just after I returned to the observation hut at 1630, with all quail again out of sight in cover. 1651 Three ♂♂ and one ♀ again in north corner, with last shower about past. I was unable to see color bands of these. 1711. Entered pen again & saw these four walking along SE fence; all were almost continually making short

California Quail

jerks of the head, somewhat similar to feeding pecks but not directed at any food. I attribute this to nervousness at my nearness. I identified Black ♀, O3 ♂, Dark Green ♂, the other ♂ being probably Red. 1715 ended observation.

April 15. Strawberry Canyon, Alameda Co. 0918 as I drove up by the pen in Behavior Lab, I noted 3 ♂♂ and 2 ♀♀ feeding in the west corner near gate (area A-1), probably on Medicago in this area. The flew as the car went by to the north corner (E-1); the orange ♂ walked along the fence and into the tall Medicago patch at DE-1; the O3 ♂ walked along the fence, then back to a ♂ and ♀, unidentified in the corner. Rain was falling all this time a little heavier as orange ♂ went into the brush cover. 0934 Sun shine after rain stopped at 0929, 6 birds in sight area E-1. Black and Yellow ♀♀ close together, then a pair very close together and two ♂♂ separated by a few feet. O3 ♂ and O5 ♀ emerged

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April 15. Strawberry Canyon, Alameda County. from bur clover patch at 0937. Birds engaged in preening and ruffling feathers, then rested motionless (0945) in a row along the NW fence in E-1, 6 birds closely bunched, one ♂ 4 feet from them, one ♀ 5 feet from the latter. At 0950 I entered the pen to read and service instruments, and 7 birds flew at once from North to East corners, the last (♀) partly ran and partly fluttered for short distances above ground, as if unable to fly.

April 16. Strawberry Canyon, Alameda County. 1125 Seven birds flew from N to E corner when I entered the pen; the eighth (♀) flushed from Medicago patch in E-1 when I came within a few feet, & ran fluttering to Eucalyptus in B-7. I searched the area where flushed in case she was using the lame bird ruse to draw me from a nest, but found nothing. Her appearance suggested one wing broken or badly injured, as she was fluttering mostly one-sidedly.

1345 I returned to pen for instrument servicing. One ♂ and 2 ♀♀

California Quail

April 16. Strawberry Canyon, Alameda Co. were visible in N corner (probably others out of sight in cover. In a moderately heavy shower lasting only a few minutes, the birds remained standing there.

April 17. Strawberry Canyon, Alameda Co. 0830. Black ♀ standing by fence in E-1, ran down NE fence to join group in E corner.

April 18. Strawberry Canyon Alameda Co. 0823 In behavior lab pen - quail under cover. 0900 Flushed 7 (or 8?) birds from east corner (E-10), all in a bunch.

April 19. Strawberry Canyon, Alameda Co. 0825 Birds in Behavior Lab pen out of sight in cover, both in rain and sunshine. At 0930, after working on weeds on the other side of the pen I flushed one ♀ from bur clover patch in E-7, and shortly thereafter 4 ♂♂ followed by 3 ♀♀, including the one with injured wing, from bur clover in E-2 (Must have included the ♀ first flushed). Picked up Blue ♀

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California Quail

April 19. Strawberry Canyon, Alameda Co. dead in N corner, with neck feathers pushed backwards some missing., ~~and skin of left side of neck torn open.~~

April 21. Strawberry Canyon, Alameda County. 1730 All seven birds in a group in E corner, running along fence when I entered pen to check rain gage.

April 22. Strawberry Canyon, Alameda Co. 0840. Six quail in Behavior lab flew from mixed bur clover and grass in E-6 in back of instrument shelter when I approached within less than 10 feet. The seventh (♀ with injured wing) ran to the east corner, and the other six soon ran & flew to the same locality. All well bunched, no pairing or aggression.

At 0852 Flushed a covey of about 20 birds alongside Grizzly Peak Blvd, opposite Pine Grove picnic area, in Eucalyptus grove with thick undergrowth predominantly grasses.

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California Quail.

April 23. Strawberry Canyon, Alameda County. 1840 Birds in Behavior Lab pen were feeding and in pairs. One pair along fence in C-10, a pair next to tall grass in D-9, and a single ♂ (Red) which ran about the pen both in the center and along the fence line (this male had mated with the Blue ♀ found dead last week. Although there was no sign that my presence in the observation hut had disturbed them, all these quail were out of sight in cover by 1850.

April 26. Berkeley, Alameda County. 0600 Saw a covey of 16 on Miller Road in the Berkeley hills starting to cross the road, then stopping with birds all across the road. After I stopped the car + watched for a moment, I proceeded, and the quail flew, mostly into trees in adjoining residence lots. 0610 at Behavior Lab saw a pair on the access road, who walked into a weed patch, then flew over the fence into the Behavior Lab. No other birds flushed. Approaching

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California Quail

April 26. Strawberry Canyon, Alameda Co. the pen, a single bird flew from nearby weeds, over the top of the pen. Within the pen 2 pairs and at least one other bird partly seen were along fence in north corner, soon ran down fence to east corner. 0613. Red ♂ calling from E-1, was answered from down slope, location of answering bird not determined. A couple of "squill" notes were then heard. At 0620 Red ♂ again started calling (assembly, with occasional emphasis on final "cow!" and was answered by a bird from a direction which would place it outside the pen; the exchange continued about 3 minutes. At 0628 another calling exchange by same two birds. At 0631 I stepped outside the pen and saw a single ♂ running across access road into weeds on the hillside. 0640. Outside quail again began calling; red ♂ responded with clucking, then assembly call, and two other pairs moved up from the other end of the pen. Two "Cow" calls were mixed in

California Quail.

April 26. Strawberry Canyon, Alameda Co. with the assembly calls. I located the "outside" bird perched on the top of the pen (area A-8), at 0653; this bird now shifted "cow!" calls, without response from penned birds; the ♂ and another pair in sight feeding on green leaves. 0710 Scattered 25 oz. can of pigeon grain.

0820 Returned to Behavior Lab and heard assembly + cow calls from at least 3 different points around the ~~lab~~ lab. In the pen at 0825 I heard a bird giving repeated cow calls from outside, apparently in brush along Grizzly Peak Blvd. Three birds in the pen were running along the fence apparently responding to the calls. Red ♂ and Black ♀ were most active and close together in this, the other ♂ wandering slowly off + remaining motionless much of the time. Timed 31 consecutive cow calls in 5 minutes from bird outside, who continued calling as he had been before this period. At 0833, the ~~[illegible]~~ other ♂ in this group, now seen to be Green,

California Quail

April 26. Strawberry Canyon, Alameda Co.
approached the other two, made a rush at the Red ♂, with head lowered, and drove him off about 10 feet, away from the Black ♀, which had been associated with Green ♂, but accompanying Red this morning. Green then resumed his rather inactive status while the other two continued running back + forth along the fence as the outside bird continued calling. 0840. Now over 12 minutes of consecutive "cow!" calls from outside. 0845. Outside calls seemed to have ceased for the moment. 0847 More 'cow!' calls. These calls sound less loud and without the note of "urgency" heard earlier. 0851 Black ♀ fed on leaves (of Pimpernel?) a few bites, then moved off to the vicinity of Green ♂, leaving Red ♂ alone; the latter also commenced feeding in Medicago patch, then resumed fence-running after a few bites. 0950 Returning to obs. hut after an hour of weed-cutting, I disturbed all

California Quail.

April 26, 1963. Strawberry Canyon Alameda Co. seven birds, who flew from the west to the east cover in a bunch, except one ♀ lagged a little behind & landed sooner. I suspect this is the bird which had a lame wing last week, which is now nearly healed. Three birds almost at once ran to the north corner, where the red ♂ resumed fence-patrolling, the other pair (Green & Black? not clearly seen) ran back and forth along NE fence. These three (Green + Black seen clearly) remained in this area, alternately feeding, running along fence, and resting. As before the Green ♂ rested more than running, the other two were more active. For several minutes Black ♀ remained very close to Red ♂, running along fence, remaining within a foot of each other & feeding side by side, with no reaction from Green ♂ 10 feet away. 1015. The three birds became motionless and rested, Red + Black together, Green about 14 feet away, all in short (cut to 2-3") grass. 1025 Entered pen

California Quail.

April 26. Strawberry Canyon, Alameda County. without disturbing any birds to see the other four resting on ground in East corner, 2 ♀♀ between a ♂ at each end. No change to end of observation at 1027. 1030 Again noted single pair of quail just outside Behavior Lab fence.

April 28. Strawberry Canyon, Alameda Co. (Change time to PDST this morning). At 1910 I stopped car at the Pine Grove Picnic Area in Tilden Park, on Grizzly Peak Blvd, and saw a small covey in the Pine trees and the grass below the Pines. One pair were perched side by side on a horizontal limb; two males were briefly in the same tree, then flew to the ground. About 7 or 8 more were moving around in the grass. Four birds conducted a series of rapid chases back + forth about 4 times. As I parked the car + left the area, I heard a series of three "squill" calls. At 1915 in the road outside the behavior lab. I flushed 2 or 3 pairs. In the pen, one bird ran from area 'A1' as I approached, one

California Quail.

Apr. 28. Strawberry Canyon, Alameda Co. male was seen to run from the vicinity of the gate, 4 birds along NW fence, and one male along NE fence. At 1925 Orange ♂ copulated with O5 ♀, (area C-1) and right afterward Green ♂ copulated with Black ♂. (C-5) In both copulations the ♀ was squatted very close to the ground with head erect, and tail raised to one side of the ♂'s tail. The male grasped the feathers on her crown with his bill, and curved his body quite sharply, as he moved his pelvic region both forward and back and sideways for the approx. 10 seconds the copulation occupied. A third pair of birds came out of the tall grass in E8 and crossed the open area feeding on the green leaves in that area, and the extra ♂ was seen along the SE fence. Green ♂ and Black ♀ had been feeding on grain in the open center of the pen. At 1937, Orange ♂ and O5 ♀, after first running rapidly from A3 to near the Eucalyptus in D-4, walked out into the

California Quail.

April 28. Strawberry Canyon, Alameda Co. center & commenced feeding on the grain in this area. After 4 minutes, an external noise which I could barely detect & could not identify resulted in these two running rapidly back to the Eucalyptus. 1950 after a period of inactivity, several birds started moving about and feeding. A pair approached a single ♂ in E-9, resulted in two chase, back & forth, after which the pair ran into the E-10 Eucalyptus, and one ♂ continued feeding. Another male was perched on a horizontal (cut) limb in this bush, with a ♀ on the ground below. When the ♀ did not join him, he hopped down to the ground and both ran into the tall grass. 1955 I could see shapes & movements of several birds in the E-9 Eucalyptus, apparently going to roost. The sun is completely gone, but the light is still ample to write notes, even inside the observation hut by the window. 2010 No further activity by this time, & light reduced to that barely enough

W. J. Francis 5B.
1963.

California Quail.

Apr. 28. Strawberry Canyon, Alameda Co., to write notes!

Apr. 29. Strawberry Canyon, Alameda Co. 1843. Counted 15 quail in a covey feeding inside Behavior Lab, near population pits, well bunched with no obvious pairing, and at the same time heard a quail calling from the vicinity of the quail pen. 1845 entered observation hut, as a pair feeding near the gate ran rapidly to the far end of the pen. Red ♂ was running all along the northwest fence line. 1903 a pair walking along SE fence, Red ♂ continuing to run the NW fence. 1915 One ♂ feeding in E-9 (a ♀ seen briefly near him), another ♂ sitting facing fence in D-10; Red ♂ no longer in the NW fence area. I inspected outside the pen for wild birds with negative results, and at 1926 the two ♂♂ were in the same position. 1929 Sighted another pair and a ♀ feeding in E9, several birds running into the open. 1933 Three pairs feeding in center of pen, Red ♂ approaching. The pairs reformed after

California Quail

April 29. Strawberry Canyon, Alameda Co.
feeding in a group for a few minutes, two previously mated pairs, plus O3 ♂ with Yellow ♀. 1939 Green + Black copulated, and as Green stepped down, Orange ♂ rushed him from about 10 feet distance and bumped him with his body. Red ♂ feeding separated from others, and was chased when another male approached him. 1945 Orange ♂ and O5 ♀ feeding in North corner near Red ♂ (who kept his distance, but even then was chased once by Orange), and "dust" bathing in D-1. Orange approached O5 once and placed a foot on her back, but she straightened up and both moved off feeding after a moment. By 1950 all pairs had retreated into cover and Red ♂ was patrolling the N.W. fence.

April 30. Strawberry Canyon, Alameda Co.
0825 In Behavior Lab. one male flew from grass inside fence to a perch on the fence wire where he gave assembly call. About 5 birds

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California Quail

~~May 1.~~ Apr. 30. Alameda County, Strawberry Canyon. were seen feeding around population pits; a ♂ accompanied by a ♀ gave a squill call to a nearby ♂. A male was seen inside the pen in A-1 near the gate; he ran and flew to the other side of the pen as I approached. 0832 With assembly and one "Cow!" call continuing from outside the pen, Red ♂ ran rapidly from grassy cover into the center of the pen, fed on grain for about 2 minutes, then moved to vicinity of Eucalyptus in B-7. 0855 No activity or calls for last 20 minutes. 0920 All seven birds resting in east corner (E-10). 0929 Heard assembly call outside the pen.

May 1. Strawberry Canyon, Alameda Co. ~~0707~~ 1907 A quail called as I entered the hut at the Behavior Lab Pen, and I noted a single male undoubtedly Red ran from B-8 toward the hut, then toward the SW fence where I noted several quail feeding outside the fence. 1913 a pair resting in the grass in A-5, opposite quail feeding

California Quail

May 1. Strawberry Canyon, Alameda Co.
outside, with single male
running along fence excitedly.
1915 Green ♂ and Black ♀ ran
to N corner, where she also
engaged in fence-running. Heard
a "Squill" call but could not be
sure of source. Third pair is
resting motionless in E corner (E-10).
1925. Looked outside the pen for
visiting quail – there were two pairs,
who appeared only a little disturbed
as I watched them from 50 feet, and
walked slowly away. Within the
pen, the 3 birds in A-5 were
disturbed and moved out of sight
in thick grass & bur clover.
Pair still in E-10, ♀ in Yellow.
1929 Green & Black ran rather rapidly
to center of pen and began feeding
Two pairs in E-10, one pair moved
away from corner and ~~♂~~ ♀ flew
up into Eucalyptus. 1933 The ♂ of
this pair walked into the base of
the Eucalyptus, as Red ♂ came into
the center of the pen. Green and
Black then moved to E-9, and at
1935 the ♀ hopped into lower branches.
1936 O3♂ flew to top of this shrub. The
other three ♂ still feeding on ground.

California Quail

May 1. Strawberry Canyon, Alameda County. One ♀ also on ground again. 1937 One male chased Red ♂ to other side of the shrub 1939. Three individual ♂♂ plus a pair on the ground near Eucalyptus. 1940 One ♂ flew up into E. shrub. 1943. ♂ of a pair flew into E. The lone male came to its base, looked up, then ran rapidly to the central clearing and fed for about a minute, returned to the E. shrub and flew into it. Within 10 seconds a male (prob. the same, now seen to be Red) jumped down and again ran away. Two ♀ and one ♂ approached, and one ♀ flew into E. at 1948. I lost track of the others for a moment, and at 1949 a ♂ chased another ♂ out of the E. shrub. 1950 One of the two ♂ flew into the shrub, followed by a slight commotion, then the other ♂ flew up. To sum up the evening activity:

No copulation, feeding in pairs, not in groups; aggression toward unmarked red ♂ only, and communal roosting.

1955. I entered pen to renew feed, and to verify that Green

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1963.

California Quail -

May 1. Strawberry Canyon, Alameda County. and Black had taken pigeon grit before feeding; all (or most) birds flew from their roosting shrubs, and settled out of sight in the grass + weeds. 1958 Some birds began moving back to the roost.

May 2. Strawberry Canyon Alameda County. 0607 Three quail seen along fence in E-1 as I entered, another pair in E-10. 0625 Green and Black moved from E-1 to pick at gravel in C-1. 0631 Heard quail calling outside. Red ♂ flew into the air toward fence in E-1 (without colliding), then began running rapidly along the fence. Green + Black also ran along fence less rapidly; by 0639, Red was still running continually, Green only feeding, and Black making short runs along fence between feeding periods. Green grass seemed to be the diet at this time. Red was tolerated by the other pair except for a threatening thrust of the head when he passed within less than a foot of Green; no reaction at all followed his close

California Quail.

May 2. Strawberry Canyon, Alameda Co. proximity to Black! 0644 Third pair of bird feeding in E-9. 0652 One of the pairs in the east corner moved to E-1 with the 3 birds there. Red ♂ ran by both ♂♂ with no reaction; then on next close approach was chased by both in succession. The chaser in each case took only a few steps with head lowered, while Red responded by running off rapidly several feet.
0700 More calls from outside, and Red ♂ again responded by flying to top of pen. A moment later 05 ♀ also flew up, then rejoined the rest of the group in the grass. Red ♂ then gave a series of calls - modified "assembly", with first two notes repeated one to three times, followed by the final "cow!" separated by a pause, and stressed. 0715 Red ♂ ceased calling and ran across pen to where other birds had been, then resumed calling in C-1.

May 3. Strawberry Canyon, Alameda Co. 0930 All seven quail together in ~~the~~ east corner, ran along fence when I entered pen to construct water pool. The dust bath

California Quail

May 3. Strawberry Canyon, Alameda County. I prepared yesterday was disturbed, with several ~~b~~ body pits, general surface irregularity, and some tracks in the edges, indicating much use.

May 6. McMillan Ranch San Luis Obispo County. At dusk about 40-50 quail were feeding near the ranch house, with occasional assembly calls and a few "cow!" calls from the perimeter. Birds nearly all appeared paired with frequent chases and squill calls as strange males (lone?) approached too closely.

May 7. McMillan Ranch, San Luis Obispo County. Awakened at 0600 by series of "cow!" calls, noted all quail had left the roost near the house. At 0625 two pair were feeding in back of the house, a few others visible in surrounding fields, and others heard calling.

1410 Listening from the north ridge of Marion Spring canyon, I heard quail calling from several places over the slope facing - at least 3 identifiable series of cow calls, with other assembly + cow calls interspersed.

California Quail.

May 7. McMillan Ranch, San Luis Obispo Co. At sunset, drove to ridge overlooking Marion Spring. Saw at least 5 pairs and one lone ♂ in grass near top of ridge, or on fence. Birds were evidently proceeding across the canyon to roost in Junipers. Last seven birds took wing as we approached & flew across canyon.

May 8. McMillan Ranch, San Luis Obispo County. 0540 Many assembly, cow, and squill calls as quail were leaving roost at ranch house. By 0615 birds were well scattered with only distant calls, 2 pair feeding back of ranch house, and two males cow-calling from fence posts. 0630 Saw a hawk (Red-tail?) feeding on fence post at far end of pasture below house. On a drive to fork in road and back I saw 5 pairs of quail in the road, and a single ♀ sitting on a fence post at the cattle guard. She flew about 10 yards into the grass as I drove by, with no sign of a ♂ in the vicinity.
May 8. Homestead - Devil's Den, Kern County. No sight or sound of quail

California Quail

May 8. Devil's Den, Kern County, Calif. at the water sites which we filled at about 0930. We then went collecting through draws and back over the hills, taking 5 specimens: #6314 - Ad. ♂, isolated in canyon; #6315 Ad. ♂ and #6316 imm. ♀ from a covey of 12-15 that flushed on a low hillside dividing two canyons; #6317 and #6318 (Imm. ♂ and ♀) flushed together from clump of brush; some downy young were seen under this brush when it was examined. Birds except for one covey were widely scattered and difficult to find.

May 8. McMillan Ranch, San Luis Obispo County. Collecting from Marion Spring to head of Partridge Canyon and back over the ridge we obtained 3 specimens: #6319 Imm. ♀, #6320 Imm. ♀, and #6321 Imm. ♂. A few other ~~scattered~~ pairs seen, but generally very few could be found and only about 3 birds heard calling in an hour of traversing the area from 2-3 p.m. Then at 1500 collected #6322 adult ♂

California Quail.

May 8. McMillan Ranch, San Luis Obispo Co. near the old house. Throughout the trip the wind was very turbulent, especially over ridges and on open slopes.

May 9. McMillan Ranch, San Luis Obispo Co. Quail were not heard leaving the roost this morning, but at 0630 I counted 44 (very close count) feeding in back of the house. One ♂ on the fence was giving what can only be described as a "hoarse" cow call, but otherwise the birds were very quiet. As I disturbed the birds in counting, about 25 remained in the middle of the field, the remainder scattered for cover. About 12 to 14 in the brushes near the house exchanged numerous assembly + squill calls, and at least two other birds outside this bunch gave assembly calls after this dispersal. The birds feeding in the middle of the field were quiescent, several always to be seen standing motionless, instead of feeding continuously. By 0752 many had drifted off, only 6 pairs remaining in the field, although

California Quail

May 9. McMillan Ranch, San Luis Obispo Co. a number could be heard in nearby shrubbery, and several were heard calling from nearby.

May 9. Hastings Reservation, Monterey Co. at 1900 I saw two pairs in the grass along stream bed in the headquarters area; these flew into an adjacent large oak and 3 were seen walking up a large sloping branch into thicker foliage above. One bird was calling from the hillside shortly afterwards. at 1920 a pair was seen feeding on the grassy slope just below chaparral and oaks; the remained mostly in an area characterized by lupine in bloom but did not appear to feed on them but on plants closer to the ground. Later examination showed plentiful Erodium here. at 1937 this pair ran quickly along the path and into the brush; when I approached the area a few minutes later at least 3 birds flew into a large oak, and there were movements indicating a total of at least 6 birds.

California Quail

May 9. Hastings Reservation, Monterey Co.
Many "plit" calls and rustlings, plus other birds on the ground indicate that 4 or 5 pairs are roosting together. John Davis has reported seeing 2 pairs together on 2 occasions recently, all other sightings have been pairs or singles.

May 10. Hastings Reservation, Monterey Co.
0600 Heard first calls of quail covey near Davis house. 0605 Flushed a pair near dooryard, another pair feeding on the hillside nearby, and heard more birds in brush, at least two pairs, since one pair flew a short distance & others heard running. A lone ♂ began giving a long series of cow calls, 4 per minute, from a perch 30 feet high in a pine tree, at about 0610, still going 10 minutes later. This accounts for all but 6 of the 15-16 birds previously seen in this covey. At 0640 the lone ♂ was on the same perch but not calling.
0642 Saw a pair resting on the ground beneath an unused shed, while a bird was giving assembly call from a distance; another pair flushed from adjacent oaks.

California Quail

May 10. Hastings Reservation, Monterey Co. Followed distant call to bird in large oak near water pump at 0700. I timed 12 calls to take exactly 3 minutes, average interval 15 seconds, varying from about 10 to 20 seconds.

1404 Flushed two pairs plus one or two more birds along road to Arnold's, in hairpin curve ~~near the flat.~~ 375' down the road from the F-1 marker. 1443 Returning, near the same spot I heard a bird calling below and answered with the Iverson quail call; after a minute a previously silent ♂ flushed from the roadside and flew down to a dead tree. In the next half hour, wandering about the brushy and grassy flat, one ♂ cow-calling nearly continually was the only quail sign, in this area where a covey of 75 had been reported during the winter.

May 11. Hastings Reservation, Monterey County. 0700 Heard single quail calling on this dark rainy morning. 0715 Six quail together on road near house; one pair flew into dead tree and perched.

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California Quail

May 12. Strawberry Canyon, Alameda Co. 1545. One ♂ was in the dust bath as I approached, and ran into cover. Right afterwards I saw two pairs along the SE fence. In the pen at 1600, disturbed 7 birds loafing * in the east corner (E-10). Grain that had been put out was all eaten, as far as I could see, except whole peas and kernels of corn.

1925. The Red (unmated) ♂ ran back + forth rapidly along the NW fence as a quail was calling outside, then twice flew into the air, and also gave a few "cow!" calls. 1944. A pair feeding on green vegetation in E-9, then the other two pairs joined them, all feeding in a group. 1954. Green-Black pair, apparently startled, ran into tall grass, where Orange-05 had already gone. The other pair is in the E-9 Eucalyptus. Sun is now gone from top of Grizzly Peak. 2003 A quail giving "cow!" call outside the pen. Red ♂ still running, others in roost or tall grass. 2007 Single ♂ (Red?) went into roost, and 3 sharp squill notes were immediately heard.

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1963.

California Quail

May 13. Strawberry Canyon, Alameda County. 0810 Heard two birds giving "Cow!" calls outside of pen at Behavior Lab, saw one male perched on fence of Lab, and another flew from near the quail pen. Single ♂ in the pen was patrolling the NW fence and giving "Cow!" calls. 0827 Two pairs feeding on green vegetation together along fence in E-10 and D-10. One pair of these engaged largely in preening till 0839, another ♀ simply rested, and other birds were out of sight. 0844. Cow calls heard nearby. 0915 No further activity, only one pair in sight crouched together on ground, feathers fluffed out. 0920 Outside the lab, heard cow calls and saw about 6-8 birds along road in Eucalyptus opposite Pine Grove picnic area.

May 14. Strawberry Canyon, Alameda County. 1600 Five birds in the open space in center of pen: Green + Black together, Red ♂ feeding very near OS ♀ with no reaction from her mate Orange. After a few minutes she moved nearer her mate + they both went to water pool while Green + Black dust bathed and Red ♂ wandered

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California Quail

May 14. Strawberry Canyon, Alameda Co.
off toward the side of the pen. Orange and O5 then dust-bathed for several minutes. The other pair were not seen up to 1620.

May 15. Strawberry Canyon, Alameda County
0820 Many cow calls all around Behavior Lab. Birds in pen not active except lone male, who may have been answering calls, although other birds calling close outside made it impossible to identify him as a caller. Calls including many "Cow!", some assembly, and a few squill, heard up until leaving at 0900.

1915 Two pairs and Red ♂ in the W. corner of pen scattered as I approached. After about 5 minutes Green + Black fed, Green ♂ took water, and the pair copulated. Eventually all 3 pairs were feeding in the open, Orange and O5 were observed copulating. O3♂ and Yellow ♀ generally stayed at a little distance, and Red ♂ stayed in a far corner. At 1950 Yellow ♀, and a few minutes later O3♂ flew into

California Quail

May 15. Strawberry Canyon, Alameda Co. the Eucalyptus in E-9. the male then flew to center of pen to feed and returned to the tree at 1955. The other two pairs went into tall grass in E-6, and behind smaller Eucalyptus in E-4. At 2003 a ♀ went into Eucalyptus roost in E-9, and a ♂ at 2005. At 2013 a ♂ (Red, by his activity) went into roost, and out again in less than a minute. At the same time another ♂ went into roost, as Red ran into grass. At 0816 he again approached a flew into top of roost. All quiet at 2020.

May 16. Strawberry Canyon, Alameda Co. 1330 to 1400 Cut weeds and investigated thick weeds + grass in the pen in Behavior Lab. Flushed 3 birds in A-10 (only when I was within less than 5 feet) and a pair in A-3. Searched these areas more carefully but found no sign of nesting. Birds extremely secretive on this very hot day.

California Quail

May 17, Strawberry Canyon, Alameda Co.
0820 at least 5 different birds heard cow-calling in vicinity of Behavior Lab. In the pen one pair was at water hole, a second pair along SE fence, one ♂ near Eucalyptus E-9.

May 18. Strawberry Canyon, Alameda Co.
0925 Lone male in the pen running back + forth along fence in A-1, while a pair of birds flushed from weeds outside the pen, perched on the top for a moment, then flew off. Male in the pen gave few cow calls.

Found no birds in trap or evidence of feeding there.

0950 Red ♂ by water pool, answering cow calls from outside the pen.

Noted many fecal droppings on top of large instrument shelter and a few on small shelter (heights 6' and 3' resp.)

May 19. Strawberry Canyon, Alameda County.
1310. Checked Behavior Lab pen: lone male flew from W corner (A-1), other birds remained in cover.

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75.

California Quail.

May 20, Strawberry Canyon, Alameda County.
0820 Saw 2 pairs foraging and heard nearby calls in Pine Grove picnic area, and saw two other birds on dirt road outside of Behavior Lab. In the pen, Red ♂ was by the gate in A-1, the 3 other pairs distributed along NW fence. Birds were quite inactive but not secretive, doing a little feeding but mostly standing still with feathers fluffed out against cold and damp. About 0830 Red ♂ began series of Cow! calls - at first widely spaced, then with intervals stabilized at 15 seconds. He did not change location but remained hunched on the ground, only raising his head and stretching his neck while giving the call. 0845 Outside the Behavior Lab, heard cow calls, and saw at least 4 pair foraging in picnic area.

1900. Saw two pairs foraging in picnic area 2 more pairs near the Behavior Lab ~~north~~ west gate, and seven birds in a bunch flushed from grass near the gate. In the pen the single male was

California Quail

May 20. Strawberry Canyon, Alameda Co. in area A-1, the other six in C-1 to E-1, loosely bunched. The birds were somewhat disturbed by my approach, and retreated near or into covering weeds. No calls heard this evening so far. From 1920 to 1933 no birds were seen, then Red ♂ came into center of pen briefly, and ran back into weeds in about 3 minutes. 1944 Glimpsed 2 pair (or more) along fence in E-1, nearly concealed. 1953 These birds began feeding more actively and moved toward open areas, remaining in a rather loose group without obvious pairing. 1959. O3♂ and Yellow ♀ moved away from the others and ran to roosting shrub, which ♀ flew into at 2000 (eucalyptus in E-9). The other 4 walked & ran to D-4 eucalyptus, and went to roost there; two birds used small shelter as stepping stone to enter the roost; all in except Red ♂ (not seen) at 2005.

May 21. Strawberry Canyon, Alameda County. 1715 Saw single ♂ just inside behavior lab fence and a pair in road near quail pen, no calls heard,

California Quail.

May 21. Strawberry Canyon, Alameda Co. 1725, in the pen the Green-Black pair were scratching in dirt of a gopher mound and foraging in C-2 and C-1, till 1728; another pair was briefly seen in E-1 before going into Medicago patch. 1753 Saw 11 quail in a bunch feeding under pines in picnic area, generally in pairs but no antagonism shown.

May 22. Strawberry Canyon, Alameda County. 1905. 7 or 8 quail feeding in Pine Grove picnic area near behavior lab. Assembly call heard twice, one distant Cow call. Calls heard from two other locations enroute Behavior Lab. In the pen at least 5 birds were in the open at 1918, and were somewhat disturbed by my approach. Two pairs soon resumed feeding in D-7. 1925 Green-Black pair came to water hole, followed by Orange-Φ5 at 1927. Pairs remained close together, ♂♂ displayed no antagonism as they passed ~~to~~ very close to each other or to ♀♀. 1932 Single ♂ seen next to gate in A-1, as a

California Quail

May 22. Strawberry Canyon, Alameda County. Cow! call was heard outside. A male was then seen walking on the netting on top of the pen. At 1938 a pair came to dust bath, and the outside bird came to a point directly overhead and gave assembly & Cow calls — a "squill" note also heard, probably by same bird since ♂ inside continued dust bathing. At 1941 lone male began Cow-calling. Yellow-φ3 pair came to water-hole. 1950 Orange ♂ perched on small shelter, with no ♀ near (other two pairs in D-788 near Eucalyptus). Is she returning to build, lay or brood? 1957 Orange ♂, after wandering with no ♀, went into grass + weed patch in E-6. Red ♂ left his place in A-1 and moved nearer to other birds in center clearing to feed. 2000 Red ♂ squatted in dust bath for a moment but did not dust. 2004 Birds starting in to eucalyptus roost in E-9. Leaving the pen at 2015, I heard two intense exchanges of squill calls from a pine tree which

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California Quail

May 22. Strawberry Canyon, Alameda Co. is apparently a roost.

May 23. Thurs. Strawberry Canyon Alameda County. 0815 Heard 4 different birds Cow-calling near the west gate of the behavior lab. In the pen, all birds appeared to be out foraging, 2 pair flew into cover as I approached. Green-Black were feeding just in front of observation window and moved to water pool, and single ♂ foraged around the edges of the clearing. 0840 One pair at water hole, ♂ responding with squill call to a calling bird outside, second pair feeding in D-4 to D-7, third pair near gate in A-1 with ♂ running along fence as bird outside called, and single ♂ moving around cleared area. All 6 birds closely associated in pairs, with pairs well-separated.

1950. No birds in sight in the pen, heard one distant call and saw one bird run into underbrush just outside of Behavior Lab gate. 1957 Orange ♂ flew from lower part of the pen to top of the large instrument shelter and thence

California Quail

May 23. Strawberry Canyon, Alameda County. to roost in Eucalyptus in D-4. 2003. Commotion in Eucalyptus in E-9, then one bird flew to ground, and then disappeared, fog too thick to see clearly where he went.

May 24. Gillis Canyon, San Luis Obispo County. 1435. At Quail Restoration Project #7, (Ivers Windmill), saw a fair sized brood of half-grown young, just able to fly. These flew into a very large atriplex clump. Several adults flew out at different times, with probably some duplication, but young birds would not flush.

May 24. Devil's Den, Kern County. At 1934 the sun disappeared behind ridge to the west of my observation point, and at 1936 I saw two pairs of quail at the lower water drum, previously found to be empty, but with wet mud (showing bill holes, prob. of Mourning Doves) in the pan. A few seconds later a pair walked to the water drum area from across the ridge to the east. At 1938 another pair appeared, then four birds to-

California Quail.

May 24. Devil's Den, Kern County.
gether flew from the top of the ridge. all eight birds flew downhill to west, none took water. At 1944 another pair crossed the ridge beyond the water drum, and at 1950 a single ♂; these birds did not even approach water and made no indication of noticing my presence, but flew downhill like the others. No other birds appeared as I observed until 2004. Indications are that these birds were going to roost in the bottom of the canyon. 15 birds in all were seen, seven pairs and a single ♂, all without young.

May 25. Devil's Den, Kern County.
0545 Saw about 12 quail at the lower water drum, a pair plus a single bird at the upper drum. 0600 A covey of about 50 birds worked their way up the ravine above the artificial roost. This area had a fair amount of Eriogonum with seeds. At 0608 as I entered the area the covey had left, about 6 pairs flew

California Quail

May 25. Devils' Den, Kern County.
from different spots in brushy areas. As I climbed up the canyon I again flushed the big bunch which flew off in two coveys of about 25 each. These all appeared to be adults, no sign of any family grouping. Back at the upper water drum at 0650, a pair ran up the trail. Assembly calls but no cow calls were heard in the covey.

May 25. McMillan Ranch, San Luis Obispo County. Observed 1100 to 1220 at Marion Spring, with negative result except for a few birds calling. 1430 Observing near old granary. In the quail enclosure I heard many clucks + glimpsed a couple of birds running through the brush, but none flushed and I could see no broods. At 1500 Two pair of quail came running down the road toward the car parked at the bend of the dirt road near the windmill. One pair turned and ran up to the quail enclosure. As

California Quail.

May 25. McMillan Ranch, San Luis Obispo Co.
they reached the edge there was an exchange of many squill calls. The second pair fed along the road then flew to the quail enclosure, along with a single male – more squill calls. Two other pairs appeared at the edge of the large enclosure, and one pair also flew to the quail enclosure. There were many squill calls, and quail moving in and out of the enclosure – 4 pairs at once on lower side of enclosure, with one chase observed, and one pair flying off. Another pair walked back across the road into the large enclosure. 1515 Most birds out of sight, 2 ♂♂ on fence posts. 1518 A third ♂ flew to perch on the third fence post from the first, the latter returning to cover in a few seconds. Male on far corner also down shortly. 1525 Two pairs and a ♂ appeared feeding along road just below ♂ perched on post. One ♂ gave squill calls as the others came near.

California Quail

May 25. McMillan Ranch, San Luis Obispo Co.
1528. Male on fence post flew down into grass, then into road to feed with other 5 birds. Within less than a minute, another ♂ flew to a post about 50 feet away, and a ♀ came out of grass to join last ♂ on the ground. Now 3 pairs plus a ♂ on the road, one ♂ on fence post (2nd post east from corner where I am parked) - previous bird on 5th post north.
1532. At least 3 more birds in road, ♂ off fence post; and a pair in the open below quail enclosure, ♀ feeding, ♂ standing erect & facing direction of a cow call. 1533. A ♂ on fence post (5th north), flew down in about 50 seconds. 1536 7 ♂♂ and 3 ♀♀ in the road. After a pair & 1 ♂ moved up to quail enclosure, another ♀ appeared near one ♂, to correct count to 4 pairs plus 3 ♂'s. Quail then gradually dispersed, 3 pairs coming quite close to car, and I took movies of one male. 1605 When leaving I saw 6 pairs and 2 other ♂♂ along the road from old house

California Quail.

May 25: McMillan Ranch, San Luis Obispo Co. to the first cattle guard. At the ranch house heard a bird cow-calling.

17~~3~~35 to 1845 observed from hill overlooking Marion Spring. Saw 9 pairs and one single male foraging, heard about two males cow-calling from time to time and occasional assembly calls. Although pairs were all well separated, with two exceptions when two pairs came quite close together in feeding, some antagonism was evidenced by fairly frequent squill calls. These were not given by any birds in sight.

May 26. McMillan Ranch, San Luis Obispo County. 0630 Heard cow-calling by three different birds on opposite slope across Marion Spring, and saw a pair of birds feeding on the hillside this side of the spring near my observation point. These birds remained in the vicinity some time, with the male perched on a fence post about 0700. At 0725, when I moved about in the process of taking temperature readings, there were 2 males on

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California Quail

May 26. McMillan Ranch, San Luis Obispo Co. nearby fence posts. They were disturbed by my movements and flew down the hill accompanied by two females which had remained concealed in the grass. Calls continued till I left at 0750, including many "Cow!"s, several "squills", and some "assembly"s, and a few birds seen feeding.

1720 Stopped by Ivers windmill on the way out to see brood noted on Friday. Saw one ♀ in grass who ran back into brush followed by 2 half-grown young - noises in the brush indicated the rest of the brood were in there.

May 27. Strawberry Canyon, Alameda Co. 1915 Saw 4 scattered pairs in the vicinity of Pine Grove picnic area, and heard a bird giving assembly call. Near entrance to Belvain Lab. a single bird flew downhill, and a Cow! call was heard shortly after, and a squill note closer to the pen. 1924. In the pen 3 birds were in sight. Green ♂ flew up & perched on

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California Quail.

May 27. Strawberry Canyon, Alameda Co.
the instrument shelter while Black
♀ was feeding in the vicinity;
and a single male was seen near
the E-9 eucalyptus. The latter
flew into the eucalyptus at
1925. At 1933 Green ♂ flew
down & joined his mate, as
Red ♂ came to center of
the pen. 1934 O3♂ and
Yellow ♀ emerged from Vetch
patch in D-3, and O3 ♂
chased Red ♂ as the pair
approached him. Then O3♂
perched on rock by water-hole
as ♀ continued to feed, plain.
1938 Green ♂ again perched on
instrument shelter to 1941. At this
time O3♂ again chased Red ♂,
but only when the pair had come
within about 2 feet of him.
1950. Noted commotion in the
weeds in the near side of area D-1,
possibly the gopher which has been
working around here? or the other
pair of quail not seen today?
1955. Two mated pairs feeding
close together with no signs of
antagonism. 1958 Single ♂
then the mated pairs, worked

California Quail.

May 27. Strawberry Canyon, Alameda Co. down close to E-9 roost. Heard a series of 2 squill notes. at 1959 birds began to enter the roost.

May 28. Strawberry Canyon, Alameda Co. 0830 Saw one pair along road and heard no calls outside the behavior lab. No birds were in sight in the behavior lab pen. 0930 Flushed 2 ♂♂ and a ♀ only when I approached very close in thick patch of Vicia and Geranium in area A-10. The remaining birds remained well hidden and did not move from cover although I covered the entire pen superficially. I hope this indicates that birds are on nests either laying or incubating. 0935 Heard one 'Cow.' call outside of Behavior Lab.

1913 A pair of birds flushed from just outside the fence of the behavior lab pen. In the pen, no birds in sight and no calls heard anywhere in the vicinity. 1922 A ♂ appeared in E-1, then ran into weed patch; then Green-Black pair came into the open to feed in same area.

California Quail -

May 28. Strawberry Canyon, Alameda County.
1929 Red ♂ came into center clearing from area E-9. 1932 Green + Black copulated. Red ♂ again out of sight in cover. Green ♂ then perched on small instrument shelter while Black ♀ preened; + remained there till 1945. 1947 Yellow-03 pair emerged from under eucalyptus in D-4, and single ♂ raised his head in D-3, then ran down to center clearing. 1951 Black ♀ flew into E-9 roost. 1954 Green ♂ to roost; some back + forth movement of birds from tree to ground. 1959 Orange ♂ emerged from grass in E-4, and chased Red ♂ from base of eucalyptus, then after two minutes ran rapidly to where the latter went into grass in E-6, + followed him in.

June 3. Strawberry Canyon, Alameda Co.
Evening observations at Behavior Lab, no calls heard when approaching. Green ♂ running around the pen clearing, no others in sight. With sun clear of the top of trees, saw two ♂♂ feeding outside the pen - one chase occurred then both flew across road; two or more other birds also flew from

California Quail

June 3. Strawberry Canyon, Alameda Co. roadside weeds –

Two ♂♂ & yellow ♀ feeding near water – took ♀ in trap. Weight with holding net 312.5 gms, tare of net 115 gms, net weight 197.5 gms. Evident brood patch, no eggs could be palpated.

June 4. Strawberry Canyon, Alameda County. 0800 Heard two birds giving "Cow." calls to the west of the behavior lab. 0830 While servicing instruments in the pen heard several series of "plits" in tall grass back of the instrument shelter, but no birds flushed.

0850 Green-Black pair at the water hole, then foraging along water course; ♂ spent most of his time standing erect while ♀ fed. 0857 ♀ went into weeds near 3rd post from corner, area A-3, along fence. A search of this area revealed nest with 18 eggs; the ♀ left the nest only when I came within 2 feet of her, then ran off quietly through the weeds. At 0930 rechecked & found ♀ on the nest, and did not disturb her.

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California Quail

June 4. Strawberry Canyon, Alameda County. 1920. A ♂ flew into a Eucalyptus west of Behavior Lab. gate, another ♂ into a Eucalyptus just south of the gate. In the pen, ♀ on the nest in A-3 — I did not disturb her at this time; no other birds in sight. 1940 Green ♂ flew to water-hole, then crossed to tall weeds in E-6. 1942 Orange ♂ on top of large instrument shelter, until 1944. Both he + Green ♂ came into open briefly. 1946 Red ♂ came from East corner into center clearing. 1950 a pair (03 ♂ and Yellow ♀) came into clearing and began feeding; Green ♂ emerged from weeds and chased Red ♂ from pool. 1957 Yellow ♀ + 03 ♂ copulated. 2003 All birds out of sight in cover, except Green ♂ in A-1. 2010 Checked nest — ♀ ran off when I reached hand toward her. Still 18 eggs in nest, plus one egg on ground about 5 feet from the nest, in the open; this egg weighed 9.1 gms.

June 5. ~~[illegible]~~ Strawberry Canyon, Alameda Co. 0830 No birds in the open in the Behavior Lab pen, and no calls heard in the vicinity. ♀ on the nest in A-3.

California Quail

June 5. Strawberry Canyon, Alameda County.
0910 Found ♀ on nest in the center of C-10; 3 ♂♂ flushed from this area, then another bird near the nest, at which time the nesting ♀ also flew. She had not moved although I searched within less than 1 foot from her. The nest contained 17 eggs. About 0920, a bird ran off through the weeds from area A-9, when I came within about 3 feet. Search of the vicinity did not disclose a nest.
0930 On leaving the Lab. saw two ♂♂ perched on bushes along Grizzly Peak Blvd, 20 feet apart, and a ♀ on ground near one ♂. All three flew off, with no antagonism shown; there may be a ♀ on a nest near by. Also heard two birds cow-calling.
1755 Both hens on nests.

June 6, Strawberry Canyon, Alameda County,
1940 Both hens on nests in Behavior Lab. pen. One ♂ flew from West corner as I approached. 1950 A pair flew back & forth along lower fence, then one bird went into Eucalyptus in E-9; the other landed in grass, then also flew into the bush in two minutes.

California Quail.

June. 6. Strawberry Canyon, Alameda Co.
2000. Red ♂ ran into center clearing a began feeding. A ♂ flew down from E-9 Eucalyptus, fed on the edge of the clearing for one minute, than ran behind weeds in E-8.
2025. Single ♂ (probably Red) flew into E-9 roost; squill calls were heard, and at 2027 he was on the ground again

June 7. Strawberry Canyon, Alameda County.
1510. A ♂ flew from A-1 as I approached, and ♀ was on the nest in A-3. One crowing bird was heard outside to the west of the Behavior Lab. 1530 Red ♂ came into center clearing to feed, 1536 dust-bathed, 1541 drank at water hole. Assembly calls heard outside at this time. Red ♂ then gave a series of assembly calls; series of assembly and squill calls heard outside. 1544 Red ♂ gave cow + assembly calls, then ran behind weeds in E-4. 1607 Cow call heard outside the pen nearby.

June 10. Strawberry Canyon, Alameda Co.
0853. ~~??~~ Numerous Cow! calls outside of Behavior Lab. A single ♂ perched on Behavior Lab fence, ut

~~Loon~~ California Quail.

June 10. Strawberry Canyon, Alameda County, calling - probably a "guardian" cock; a single ♂ in center clearing of the quail pen. 0905 Several nearby Cow! and assembly calls. A pair of birds (not clearly distinguished by colors, but believed to be Yellow-03) crossed the clearing and went into weed patch in D-7,8. Search of this and other areas revealed no nest, failed to flush this pair or any other birds. Both hens incubating previously found nests. ~~Cow~~ calls frequent outside the pen, one from a ♂ perched on the wire netting top of the pen.

June 11. Strawberry Canyon, Alameda Co. 0810 No quail calls heard on arrival at behavior lab, ~~[illegible]~~ many song-birds heard. A pair of quail ran along access road from outside the fence to the ~~back~~ population pits west of the quail pen. Four birds in the pen flew from center into weeds at bottom of pen. I immediately checked both nests and found the hens on them, so these 4 were probably the 4 males. 0850 Unidentified ♂

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June 11. Strawberry Canyon, Alameda County.
in area D-7 gave three assembly calls,
then walked back into weedy cover.
0900 On leaving the lab I heard
a Cow! call to the south,
and again saw a pair on the
road to the west.

June 12. Strawberry Canyon, Alameda Co.
0645 Outside the Behavior lab heard
two birds give respectively Cow! and
Assembly calls. One ♂ was standing
on an earth mound (guardian?)
near population pits, a second
flew to the top of the quail pen.
In the pen 2 birds flew from A-1 to
the bottom of the pen. 0655 I
checked the nest in A-3; a bird
ran off through the grass as I
approached, while the hen re-
mained in the nest. A series of
Cow!, Assembly, and some Squill
calls were heard just outside the
pen. 0702 Two birds flew into
the E-9 Eucalyptus, two others into
weed patch in D-8. I entered the
pen to set the Bailey trap, and two
males ran out of D-8, after a few
Squill calls. 0740 No birds have

California Quail

June 12. Strawberry Canyon, Alameda County. emerged from cover since previous note; calls heard outside intermittently during this period. 0810 Red ♂ ran across clearing from D-8 to E-2. 0840 No further activity or calls; ended observations.

1325. A pair of birds were resting on the concrete next to observation hut, in area A-2, could not see color bands. 1330 I attempted to catch hens by hand on the nest, but both flushed when my hand was within a few inches. Photographed nests & eggs with 35 mm B+W and with movie Kodachrome, A-3 nest first, then C-10 nest. These still had 18 and 17 eggs respectively. 1420 A ♀ with dark band not clearly seen (either Black or dirty OS) came out of weeds in D-6, fed in the open for a moment, then perched on the instrument shelter for a while and flew across to area B-2, and then resumed incubating the A-3 nest.

1925. "Guardian" ♂ flew from A-1 to lower part of pen as I approached.

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June 12. Strawberry Canyon, Alameda County. Checked both nests, both hens incubating. 1938 One ♂ ran from E-7 to D-9; and at 1940 another ♂ was feeding in E-7, then ♀ seen with him. At 1944 this pair retreated into cover in E-7, still feeding. 1950 Male from E-7 flew up into E-9 roost. 1958 a bird flew from C-10 into E-9 roost. Checked E-7 for nest — none found, no birds flushed here or from E-9 roost.

June 13. Strawberry Canyon, Alameda County. 0840 No quail seen or heard outside the Behavior Lab. Both nests in the pen with ♀ incubating, no other birds seen or heard.

June 16. Strawberry Canyon, Alameda Co. 1925. Saw a ♂ in the road west of Behavior Lab., heard a squill call in the vicinity of the gate, and saw another ♂ walking along the top of the quail pen. In the pen a bird flew from A-1 as I approached. 2 birds in the center had gone into cover when I entered the observation hut.

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June 16. Strawberry Canyon, Alameda Co. 1944. Noted a ♂ in "Guard" posture in low weeds in E-1, out of sight at 1946. 1947. Red ♂ came from vicinity of E-9 roost to feed in D-5, and another ♂ left roost to the ground nearby. 1953. Red ♂ ran to E-9 roost and flew up into it. 1959. A ♂ left the weed patch in D-1, ran very rapidly to roost E-9 and flew into it. Within seconds the Red ♂ ran from roost area to feeding in E-7. 2015 Checked nest in C-10 after searching C-1, D-1, E-1 for possible nest. C-10 nest had hatched, with remains of 12 shells there, no unhatched egg.

June 17. Strawberry Canyon, Alameda Co. 0857. Heard one bird giving Cow! call south of Behavior Lab. pens. No birds in the open in the pen, but a lone ♂ was walking across the top of the pen. 0905 Red ♂ running along fence in E-2. ♀ incubating nest in A-3. 0930 Heard many "Pit" calls, coming from about area E-4, and apparently two birds. These lasted about 3 minutes, gradually

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June 17. Strawberry Canyon, Alameda Co.
tapering off in number + intensity.
0942. Saw a pair briefly in D-8, who then went into [illegible] weed patch there, several chicks followed! The family gradually moved up along the edge of thick weeds, chicks + ♀ feeding steadily, ♂ spending some time looking about. 0948 Another ♂ feeding in E-8. 0950 Family group out of sight in weeds. 0953. ♂ in [illegible] E-8 moved to D-6, seen to be Red. Pair with chicks crossed C-8, below water hole; a lone male on top of the pen just above the family. Ended obs. at 0957.
1910. Lone ♂ outside sitting on the pen over area A-1. A bird (guarding ♂, Green?) flew from this area as I approached. Incubating ♀ on the nest in A-3. 1932. Red ♂ in clearing, soon ran to cover in North corner. Squill calls heard & weeds seen moving in D-5. 1938 Orange ♂ feeding in E-3; if he is not the father of the just hatched brood, as his being alone indicates, then by elimination this brood is from O3 ♂ and Yellow ♀.

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June 17. Strawberry Canyon, Alameda Co. At 1940 a ♂ flew into E-9 roost.

June 18. Strawberry Canyon, Alameda Co. 0750. A male (Red-Green) flew from West corner of Behavior Lab. pen as I approached. ~~Green~~ Male Φ3 was in the central clearing, feeding a little, then stood on the edge of dust bath area. An outside ♂ walked across the top of the pen and gave a few assembly & Cow! calls; Φ3 ♂ then gave a series of Cow! calls, ran up and down the cleared area, and at 0800 perched on the small instrument shelter.

1500. Saw a pair of birds with several small chicks in area A-1 and A-2, who all went into weeds, and moved down along fence. Saw the ♂ to be Orange. At 1502, Black ♀ flew across pen from A-3 (nest site) to top of instrument shelter. She gave assembly call twice and was joined by Green ♂. I checked the nest at 1508 and found the 18 eggs unchanged; suggest the passage of the other family dis-

California Quail

June 18. Strawberry Canyon, Alameda Co.
flushed the incubating ♀. 1515 Unidentified adult pair feeding near water pool, ran down to C-9 at 1518; then single ♂ (different) crossed from D-8 to C-7; the other ♂ just visible in C-9. 1521 Red ♂ in North corner. At 1523 ♂ in C-8 crossed to North corner, and clearly identified as Red - previous bird was either mis-identified (could have been Orange) or flew back unobserved. 1524 Saw adult pair near water hole again, then they crossed B-9 and into weeds, evidently now returning to the nest in A-3. 1530 Pair visible in B-8; heard a single Cow! call - apparently outside the pen. 1533 Green-Black pair flew from B-8 to within 3 feet of nest in A-3, and ♀ at once ran to the nest; this ended an inattentive period of 31 minutes.

No further activity up to 1610, when two birds were heard crowing outside the pen - one very close. At 1626 a ♂ visible in weeds in C-9; at 1630 he walked toward water-hole, feeding. a second ♂ standing in D-8. The first (prob. Orange) ran into

California Quail.

June 18. Strawberry Canyon, Alameda Co. the center clearing, then back into weeds in C-7; while the second (ident. as Ø3) came into the open, then ran up toward North corner. A series of two Cow! calls heard nearby at this time. At 1635, the Ø3 ♂ seen to go into dense grass clump in the corner (E-1). I searched this area, and flushed out the ♂ crouched in the extreme corner - he remained tight until I came within about 2 feet, then flew. No sign of a nest or a ♀ in this vicinity. Cut weeds till 1652. No activity up to 1700.

June 19. Strawberry Canyon, Alameda Co. 1310 A pair of birds were perched on the large instrument shelter in the Behavior Lab. pen. The nest in A-3 was unattended, no change in the eggs. At 1316 this pair returned to the shelter, the ♂ (cream) perched on top while the ♀ fed nearby for a moment, then perched on small shelter. 1324 Both birds flew to area A-3 & ♀ returned to nest.

California Quail

June 19. Strawberry Canyon, Alameda Co.
1330 Red ♂ walked from E-9 to E-3.
1340 A number of downy chicks were noted moving back and forth along the outside of the fence opposite the nest in A-3. Vegetation was too thick to see them clearly outside; a male was perched on the top of the fence just above. 1341. A loud emphatic Squill call was heard apparently from Green ♂, now in A-4, perhaps in response to ♂ outside. A ♂ noted in C-1, standing very erect, and pulsing the throat rapidly (3-4 per second) with bill parted; no sound could be heard. As he ran off, his leg band appeared to be Red. 1356 Noted a pair in A-5 moving downhill along the fence. Checked nest in A-3 & found hen still sitting, so this was another pair. 1415 Red ♂ patrolling NW fence. Another ♂ seen 10 minutes ago in E-3. 1421 Saw a ♂ and ♀ and some small chicks in A-5, and heard muted assembly calls and various clucks. This group moved SE along the fence slowly, the ♂ being seen from time to time, and reaching A-9 at 1433.

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June 19. Strawberry Canyon, Alameda Co.
1435. The lone ♂ outside has remained on top of the pen, and is now over A-10, perhaps following the brood of chicks. 1442. He walked over B-10, then flew to ground next to fence. 1457. Orange-05 pair moved up from E-3 to weeds in E-1; I saw only 4 chicks with them, but others may have preceded them before the adults caught my eye. The Φ3 ♂ moved along fence into D-1 as the family came into his corner. 1501 One ♂ chased another from D-1, down to center of pen, then both took flight and chase continued in the air back to the north corner. Orange ♂ was not involved - probably Φ3 chasing Red. 1515 Φ5 ♀ with 5 chicks crossing the clearing while Orange ♂ gave assembly calls + some squall calls in D-1; both Red and Φ3 ♂♂ are in the vicinity. 1520 Orange ♂ still calling as ♀ and chicks went by water hole to B-5; a chick drinking seemed to be a sixth which had become separated.
Red occasionally answered Orange

California Quail

June 19. Strawberry Canyon, Alameda Co. with a "husky" assembly, verging on the squill call quality; but retreated when Orange approached. 1530 a third bird, either inside or outside, appears to be in this vocal duel, Red ♂ having retreated down the NE fence. 1535 I entered the pen for an instrument check and Orange ♂ responded with a long series of "plit" notes, retreating slowly as I came closer, then other males, including one outside the pen, gave several minutes of assembly, squill, and plit calls.

June 20. Gillis Canyon, San Luis Obispo County. 1750 at Ives's Windmill, where half-grown young were seen last month, I saw 4 ♂♂ and 1 ♀ on the pasture just outside the enclosure. Another ♀ was perched on top of a bush and giving the assembly call. Several pairs and single ♂♂ were seen along the road in driving up to McMillan's, and a few "Cow!"

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June 20. McMillan Ranch, San Luis Obispo Co. calls were heard.

June 21. McMillan Ranch, San Luis Obispo Co. First heard quail calls near camp at 0550. These continued intermittently as long as I was in camp, mostly 'assembly', some 'cow!', and occasional squill calls. Noted several pairs and individual ♂♂ on the road to the ranch house. At 1000 a pair with a large brood of very small young, about 15-18 crossed the clearing at the ranch house, other small young seen in back of the house.

Marion Spring blind: 1148 a pair without young came to water, ♂ gave several assembly calls. 1158 a pair with several small young were on the hillside above the seepage pool up the canyon from the water trough, and another ♂ on the first small ridge. Assembly and squill calls from both. 1203 The family group moved across the slope and down to ground water pools just below the trough. I counted 11 chicks, only a few days old. The adults went

California Quail.

June 21. McMillan Ranch San Luis Obispo Co.
to water at once, but the chicks ran first to adjacent weedy cover, then came out to water. 1213 Two ♂♂ and a pair without young came to water. 1215 Two more pairs with no young and a single ♂ came directly down hill, as the family left up the slope down canyon. 1219 Counted 4 single ♂♂ and 2 pairs near the water. Some squill calls, a beginning of a fight, and a very short chase were observed. 1221 A pair (without young) came down hill to water - this may have been a previously observed pair that had been driven off a few minutes ago. 1225 Most of these birds worked off as a group, feeding below the water trough, but with numerous squill calls as they came close. 1230 Another pair without young - this makes at least 5 pair without chicks to one pair with a brood of 11 - a ratio insufficient to maintain a 1:1 ratio of young to old. Left the blind at 12:37.

California Quail

June 21. McMillan Ranch, San Luis Obispo Co.
1452. In the blind at Marion Spring.
1517. Heard a series of low assembly calls on opposite hillside. 1533 I saw a ♂ just below the fence across the canyon, who then retreated into the weeds and I heard a series of low "conversational" notes. 1535 A pair without young came down hill across the fence, and into the area of the single ♂. After they met there were several squill calls and other throaty "clucking" notes, then the single male left the weeds and sat in the dust near the water. At 1537 another pair without young came down the same trail as the first, then crossed the fence and continued down to the water, where they foraged along the water's edge, scratching in the dust and then drinking; at 1544 walked back up the hill slowly. At 1547 a pair with a single chick, larger than the brood seen earlier but still much less than half-grown came down hill, foraged in the

California Quail

June 21, McMillan Ranch, San Luis Obispo Co.
weeds just above the trough, then ran up the hill at 1551 as a herd of cattle came to drink at the water trough. An occasional assembly call was heard while cattle milled around the area & finally partially scattered, about half remaining near water trough. At 1747 a single ♂ flew to fence post on ridge above spring and gave several assembly calls. A pair was seen to cross over with several chicks near him. They worked down the hill across the fence and constituted the following: ~~[struck]~~ two ♀♀ and one ♂, followed by eleven half-grown chicks, and another ♂ bringing up the rear. They did not come to water, but retreated up the hill when startled, the two ♂♂ changing places at random as the group milled around. Some squill calls were also heard at this time. In addition to this double brood, at 1810 there were two pairs without young and a single male on the ridge across the fence. On further inspection, these chicks

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June 21. McMillan Ranch, San Luis Obispo Co.
appeared to be somewhat smaller than half grown. At 1826 the family group, followed by two other pairs, moved up the ridge to the left, while another pair without young approached on the slope of the hill from the left.
1830 a pair without young approached from the left (probably not one of the pairs previously counted), crossed over above trough, and returned without going to water. ~~At~~ 1836 This (presumably) pair returned and drank as most cattle left the immediate neighborhood of the trough. 1846. A pair walked ~~u~~ up the hill alongside the blind to forage in the pasture; a single ♂ was also in this area.
1855. A pair crossed the canyon and foraged uphill directly past the blind (did not approach water, where one calf was still lapping water from the inlet pipe.) At 1909 this calf finally left the water trough. At 1917 two pairs came down the canyon from the left, and ran up hill (one pair each side) as the same calf returned for another drink. Ended observations.
Saw 5 pairs on the road and

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June 21. McMillan Ranch, San Luis Obispo Co. in the fields near the ranch house, apparently heading for the artificial roost there. On the way to camp saw a covey of 15-18 birds, near the canyon bottom where the back road joins Gillis Canyon Road. These were apparently all adults.

June 22. McMillan Ranch, San Luis Obispo County. 0820 I disturbed a number of birds as I approached the blind at Marcin Spring - from a distance I would estimate a brood of 8-10 nearly grown young and about 2 other pairs of adults. 0845 A brood of 6 half-grown chicks accompanied by 4 adults came to water, and in about 2 minutes were joined by 8 more young about the same size - the 14 probably are the combined broods of the two pairs. At 0850 another brood of 9 young arrived, followed after a short interval by a pair of adults; the ♂ chased one of the young of the first group. The groups intermingled so it was difficult to distinguish broods, all being

California Quail

June 22. McMillan Ranch, San Luis Obispo Co. - very nearly the same size. 0855 a ♀ chased a young bird; a similar chase at 0858 as a large group of adults and young came to the water. These left in about one minute in two groups - an adult pair with 13 chicks, another pair with about 8 - all the same size as the previous group - may be the same. 0900 An adult pair without young at water. 0904 A single ♂. 0913 A single ♂. 0935 An adult pair, followed shortly by a single ♂ neither took notice of the other. Assembly calls are continuing fairly close for the last 5 or 10 minutes, and a series of squill calls heard at 0939. At 0940 an adult pair. 0943 Group of two pairs plus two single ♂♂; one of the later chased the other, who then strayed back away from water, then came in from another direction at 0945, followed by two more ♂♂, one crippled with right leg hanging completely useless, the bird hopping on one leg only. 0946. Another adult pair. 0948 An adult pair from the left and

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June 22. McMillan Ranch, San Luis Obispo Co. a pair with three quite small chicks (8-10 days?) from the right. Many of the previous group (6 ♂♂ and 2 ♀♀ closely grouped) moved off but some came back, making it difficult to detect new individuals, if any arrived. 0955. The three chicks were chased by the ♀ of a pair which they encountered when leaving water; parents did not show aggression but left with the chicks in another direction. These chicks are short of a juvenal plumage, but little down is visible; length is less than ½ that of the adult. 0958 An adult pair came directly to water from up-canyon to the left, most probably another pair from the previous group. Still many assembly calls, some squill calls. 1001 Another adult pair from the hill-side across canyon to the right. 1007. A pair with eleven downy chicks only a few days old came down hill from the left so two pairs with combined broods of about 21 came to water along canyon floor from left.

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June 22. McMillan Ranch, San Luis Obispo Co.
The latter were in juvenal plumage with no trace of down except on the head. The two groups mixed together, the ♀ with smaller chicks was seen to peck at her own (disciplinary?) and the larger group moved up hill as the small chicks went to water. 1027 a pair with 10 ~~[illegible]~~ downy chicks, also only a few days old, and an adult pair foraging near the water trough. 1031. Another adult pair. 1036 Adult pair - possibly the same as the last 1043. Another adult pair from up-canyon. 1105. A single ♂ crossed hillside above the water trough. Decrease in activity, including calls, the last half-hour indicates main watering period is past, so ended observations.

1544. Clucking birds coming to water-hole at the ranch house. 1545 A pair with one chick, less than half-grown, crossed the clearing. 1555. Adult pair; ♀ drank first, ♂ after she had finished. 1607 Adult pair, same procedure, ♂ in "guardian" posture while ♀ drinking; in this

California Quail.

June 22. McMillan Ranch, San Luis Obispo Co.
case, the ♀ walked off before the ♂
drank and he ran after her without
getting water. 1637 Adult pair, ♂
leading, and he drank first, ♀
followed later, drank, and retreated
first. 1641. Pair with 3 chicks, still
with much down but juvenal feathers
partly grown over most of the body. These
came directly to water with ♀, drank
quickly + retreated, the ♂ following.
1646. Adult pair, drank together.
1658 A pair with 4 nearly full grown
young crossed the clearing, apparently
going toward the water. 1706 Adult
pair, drank together. 1712 Single ♀
1718 Single ♂. 1724 adult pair, drank
rather briefly. 1728 Adult pair, drank
together. 1730 Pair with 3 well-grown
chicks, about 2/3 length of adults
with definite topknots. 1731 As an
adult pair was drinking (perhaps a
pair previously noted) one of a group
of well grown young came to water,
the others hanging back - seems
to be family noted at 1658. The
♀ attacked another female, pecking
repeatedly at the back of her head,
and then the other 3 chicks drank.

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June 22. McMillan Ranch, San Luis Obispo Co. 1744. Driving up the road from the ranch house I flushed a large brood of young that appeared no more than half grown, yet were able to fly across the canyon, no count was possible, but there were at least 20, I could not tell if there was more than one pair of adults. 1749. Two pairs of adults with about 20 half grown young were in the turn of the road at the old granary, ran to the base of the windmill. 1751. In the quail enclosure here, a ♂ on the fence post and one on the ground flew into nearest shrubbery, followed by 4 half-grown young. 1757 In the road across the ridge near camp, flushed a pair with about 4 well grown young, good fliers, and another adult pair.

2000 to 2045 I watched quail going to roost in back of ranch house. I saw 30 going to roost in the artificial roosts there, but saw as many or

California Quail.

June 22. McMillan Ranch, San Luis Obispo Co.
more bird around to the front of the house to roost there. Perhaps 100 birds are roosting there all told. One pair, which went to front of the house, had a brood of 12 young nearly full grown; and a pair which went into the artificial roost had 4 young about half grown, but good fliers. A full-fledged cockfight occurred, with two birds confronting each other, and leaping up at each other; however no blows were struck, and it ended with a short chase, after which the loser retreated.

June 23. McMillan Ranch, San Luis Obispo Co.
This morning I heard squill calls at 0512, from the roost tree near which I was camped, and saw numerous pairs along the road on the way to Marin Spring, where I settled in the blind at 0700. A few assembly calls were heard in the distance, but this is apparently ahead of time for morning visits to water.

California Quail

June 23. McMillan Ranch, San Luis Obispo County.
0708 Heard a series of "plit" calls nearby and saw one ♂ drinking at seepage pool up canyon, while another walked down to drink below the water trough. 0716 A pair with 3 small chicks, just past the downy stage. 0720 Two more males up the canyon, one gave three "punky" assembly calls; a ♀ joined the other, drinking at the seepage up the canyon. The first of these two ♂♂ got water by hopping onto a board floating in the water trough, since level is too low to reach from the edge of the trough except in one corner. The same ♂ remained near the water trough foraging, apparently for grit particles; he stayed on bare trampled ground & did not seem to pick anything from cattle droppings.
0741 Three pairs of adults on canyon bottom, another pair followed by a single ♂ came down hill.
0751 Four ♂♂ plus a pair approached from opposite ridge to the left, the mated ♂ chased another, with squill calls. 0755. Birds are moving in and out, in pairs and single ♂♂, so that I cannot

California Quail

June 23. McMillan Ranch, San Luis Obispo County.
Keep the count straight. I believe three more pairs and two more males have joined the group. There is considerable noise, assembly calls, clucking, squill calls accompanying chases or without chase. 0757 Saw crippled ♂, probably same one noted yesterday. There are at least six pairs present and 6-8 single ♂♂, no young birds. 0801 A better look at crippled ♂ - angle of broken leg and style of hopping exactly like that seen yesterday. At 0805 got a good count of 22 birds as they moved off, 16 in one group and others separately. I purposely startled the group to note their flight - what they can, did not see any sign of molt in those that did fly. A brood of 4-6 nearly grown young not previously seen also flew off up the hill. These birds behaved almost as in a covey, except for the aggression frequent between males. 0815 A brood of 15 half grown young with a pair of adults crossed along ridge opposite the

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June 23. McMillan Ranch, San Luis Obispo County. blind, several birds flying part of the way, quite competently. There seemed to be another family group dispersible through the grass near them. 0818 An adult pair and a ♂ at the water trough. 0820 a pair with eleven half-grown young came to water area; the first were chased off by the ♂ of the pair there, and after a little milling around they retreated up the hill; one young bird made a rather long flight and circled back up to the top of the ridge. 0824 Pair with 16 young came to water, the other group visible on the ridge at the same time; and a group of about 10 adults up the hill, with one small chick, which was chased by one of the adults. Much interaction as birds mixed, with groups running into cover, flying a short distance in some cases, then re-turning to water. 0834. A single half-grown chick came from the left, apparently lost, & joined the others. then both large broods moved off down canyon, and I left the blind.

California Quail

June 23. Gillis Canyon, San Luis Obispo Co. At Iver's Windmill, leaving McMillan ranch, 7 nearly grown young and 3 old birds flew into the brush, one young a poor flier, at 1121.

June 23. Hastings Reservation, Monterey County. At 1632 saw an adult pair in the road near the fork. They gave several "plit" calls, ran back into the grass, then came into the road again and watched as a snake crossed the road (it apparently went into a burrow, since I could not locate it immediately afterward). The quail then ran down the pump house road.

I parked down this road about 100 feet from the pump. At 1652 an adult pair came running down the road; paid little attention to the car parked with the front almost on the road, only running a little faster on the further wheel track; and went directly to the pump, where the seepage water is not visible from this point. 1527. Adult pair ran back up the road and into cover after passing the car.

California Quail.

June 23. Hastings Reservation, Monterey County.
1740 Saw (another?) adult pair further up pump road as I was leaving the area.

June 24. Hastings Reservation, Monterey County.
0805 a ♂ crowing from fence post near fork in the road in HQ area, at about 11 sec. intervals, except occasionally a double crow - 1 or 2 sec. interval.
0945 I walked dirt entrance road looking for tracks in the dust or other signs of quail broods; negative results until at 1030, at the ford nearest the entrance gate, a ♂ flew up briefly from the adjacent grassy meadow, then dropped back into the grass and gave a series of "plit" notes. I retreated to an inconspicuous position and watched till 1045, then approached for a closer look - no evidence of quail.
1113 A ♂ flew from grassy slope in back of garages at Davis house, up into large live oak. The distribution - or lack of it - noted suggests that most of the birds (except one or two unmated males) are incubating.

California Quail

June 25. Strawberry Canyon, Alameda Co.
0855 Checked nest A-3 in Behavior lab. pen. ♀ was brooding chicks which had recently hatched - several heads were visible as they moved about and stretched necks out from beneath the hen's feathers. Did not disturb them.
1525. Heard two birds giving cow! call near Pine Grove picnic area when I parked. 1530 Checked nest A-3 in Behavior Lab pen - 17 empty shells and one unhatched egg, which differed in appearance from the others in having a light brownish instead of white ground color. 1555. A ♂ walking on top of the pen (outside) in A-7, near probable position of the new brood, as a ♂ inside ran from there up to A-5. 1558 Heard a squill call, then two assembly calls from outside to the NW, 1630 A ♂ in A-7 in the "guardian" posture, occ. feeding. 1632 Pair Orange-05 came around weed patch in D-7, with 2 or 3 chicks visible, but went back in weeds. 1633. Pair with many newly hatched young in B-5 moving across toward the center of the pen. 1639 Orange family in C-8, still staying out of open areas.

California Quail

June 25. Strawberry Canyon, Alameda County. 1702. Orange ♂ and O5 ♀ with only 3 downy chicks foraging in D-7 for 2 minutes, then returned to weed patch. These chicks do not appear ~~as~~ noticeably larger than when seen almost a week ago. 1706. O3 ♂ came from E-8 toward the center, then ran back; the fact that his mate was not with him suggests she may be incubating.

June 26. Strawberry Canyon, Alameda County. 0920 Heard a Cow! call near Pine Grove when approaching Behavior Lab. 0925 in the Behavior Lab pen the Red ♂ walking around in the west corner; a pair in thick weeds near south corner. At least 7 House Finches have found a way into the pen and are having trouble getting out, also some Juncos inside. 0931 One quail chased another in west corner; Red ♂ is in B-4. 0941. A pair with a large number of small young in A-5 to B-5, staying in weedy cover. 0955 Green family near fence in A-5. I entered the pen to try to locate other birds or nests. Found this family with ♀ along fence - the ♀ did not

California Quail.

June 26. Strawberry Canyon, Alameda County. flush although I was within a foot of her, but led chicks away from the fence. There were at least a dozen, probably more. Later flushed a bird in E-10 next to the fence, only when I came very close. No nests could be found in a very careful search of the NE half of the pen, up to 1050.

1538 A pair with chicks visible thru weeds in C-10. 1604 A ♂ visible along fence in B-10 as the pair with chicks were seen in C-9. 1610 Male Ø3 at water-hole, then feeding in center of pen very rapidly. He then ran rather quickly behind E-9 Eucalyptus to the East corner. 1615 Orange ♂ left weeds in E-6 and flew up to perch on instrument shelter; another ♂ visible in A-6. Orange left perch at 1617. 1630 ♂ with chicks in B-9. 1637. A ♀ appeared briefly at the edge of weed patch in E-5. No chicks have been seen in that area, so I would suspect it to be Yellow ♀; yet if she is incubating a nest near there, it is a masterpiece of concealment, since we searched there very

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June 26. Strawberry Canyon, Alameda County.
thoroughly this morning. Nothing further seen to 1655, when I entered the pen and searched area where the last ♀ was seen. I flushed a bird and found a few contour feathers, but no nest. Ended observation at 1705.

June 27. Strawberry Canyon, Alameda County.
1915, Heard Cow! call to west of Behavior Lab. and saw a ♂ in the trail just outside the lab. fence. As the latter flew, noted that there were no retrices missing which would indicate beginning of molt. 1920 Two males seen in flight, in weedy cover. 1928. ♂ at edge of weeds in C-8. 1954. After standing nearly motionless for 26 minutes, this male ran across to E-9 Eucalyptus and flew into it; ident. as Red.
2018 Orange ♂ ran from E-9 up to D-4 and flew into Eucalyptus there. 2033 No further activity, ended observation.

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June 28. Strawberry Canyon, Alameda County. 0725. Heard Cow! call near Behavioral Lab. In the pen at 0730 Red ♂ in A-1 was running back & forth along gate, and gave several assembly & cow! calls. Another bird calling from very close outside the pen. I flushed Red in order to see him in flight: tail feathers had a definitely ragged appearance, but I was unable to determine with assurance whether molt had begun. 0810 With outside Cow! calls continuing regularly, Red ♂ walked up toward the west corner again, and another bird outside joined in the calling, alternating with the first. 0827 Another ♂ ran into cover in E-8, Red still in A-1. 0831 A pair briefly noted in B-8. 0840 Red ♂ walked down toward south corner — outside calls continuing, less frequent & regular — and returned at 0844. 0845 Pair with many small chicks in B-7. Nearly half the pen is now in full sunshine, the remainder about 2/3 shaded by eucalyptus trees to the east. 0852 Green ♂ perched on weeds in B-6 while chicks foraging nearby with ♀. 0900 As Green family moved into clearing in A-4, D

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June 28, Strawberry Canyon, Alameda County. Counted 14 chicks, with possibly some missed in weeds 2-3 inches tall. Green ♂ gave squill call as Red ♂ came close, then the latter went to water hole, thence to cover in weeds. 0905 Family out of sight in weeds, working down towards south corner. 0910 Two guardian males visible in A-7 and A-8. 0915 Pair with chicks in B-5. These moved into central clearing & seen to be the same (Green) family. 0926 Counted 16 (perhaps 17) as they passed water hole without drinking, and went into weedy cover. 0935 Red ♂, after standing erect as in guardian pose for several minutes in A-5, fed in clearing in A-4, then at 0938 returned to A-1, where a pair with an estimated 8 chicks, about a week old, were foraging outside the fence. The outside male twice gave squill calls and ran rushed at Red ♂ across the fence, meanwhile another single ♂ on top of the cage flew down near this family. 0940 The Green family went to the water-hole where the adults and some of the young drank. 0942 I stopped

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June 28. Strawberry Canyon, Alameda County.
outside the hut to look at the family outside. The chicks were on the bank very close and at once hid under vegetation and froze while the parents ran around close by making alarm notes, and the ♂ made a display evidently intended to distract me — he half-squatted, partly extended his wings and made several short rushes, at the same time giving a call note I had not heard before — somewhat like "Plit" of alarm, but broken and of a different quality. After I returned to the hut, at 0948 I heard assembly calls just outside and then saw the family group heading downhill along the SW fence outside. These chicks were of a size comparable to the Orange family when last seen 3 days ago. ~~1012~~ All quail went into cover after this commotion until 1012 when I saw a ♂ fly to top of the pen (outside) in E-10, and watch another ♂ outside the fence in E-10.

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June 28. Strawberry Canyon, Alameda County. 1017 Noted a ♂ in A-7 as Green family emerged from E-8; ♂ perched on instrument shelter as ♀ and chicks foraged along edge of weed patch. 1025. Family returned by same route, as another ♂ visible in D-9, with a ♀. Pen is now in complete sunshine except south & east edges and local shade of vegetation inside. 1034. Chicks visible with pair in D-8, larger than Green family. 1040 Green family coming into D-8 as the previous pair emerged from weeds into C-8, then to water-hole again; I counted (uncertainly) 17 chicks; then they moved in weeds in B-6. 1047. A pair with several(?) chicks just below the water hole. Then ♀ OS came to water hole with one chick, with remiges sprouting + twice the size of the younger chicks; Orange ♂ stood at edge of water while one other chick drank, then at 1053 the family returned to weeds with one smaller chick strayed from the Green brood(?). Since previous glimpses appeared to be 4 or 5 chicks, this family may be somewhat scattered.

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June 28. Strawberry Canyon, Alameda County. 1103. A good count of 17 chicks in Green family crossing a clearing in E-2. This does not account for smaller chicks seen with Orange family!?. 1110 Green family came from seed patch into D-6 as another pair with chicks were sighted briefly in E-7. Green family then crossed to water hole where ♀ drank at 1117, then moved down toward fence through C-9. 1131. A short chase in E-10, followed by several spill calls - 1135 A pair foraging in C-9, a "harsh" variation of assembly call heard outside. 1143. Pair emerged from weeds in D-7 with 2 large and 1 small chicks, came to water hole at 1147 and chicks drank. The 2 large chicks have tufts of down in the tail region, the smaller quite tail-less. At 1149 they went into cover in C-8 near eucalyptus shrub. 1155 Saw Green family in A-1; as they moved down the fence, I saw a number of small chicks outside the fence & Blue's ♀ was uttering low soft assembly calls. I examined the fence and found that at one point the outer ½" hard-ware cloth was only 8" high and had a gap between it and the

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June 28. Strawberry Canyon, Alameda County.
cyclone fence. It appears possible that the chicks, after going through the cyclone fence, could clamber up over the hardware cloth barrier. This would account for the sharp loss in the Orange brood, too. There does not appear to be any way for the chicks to get back in.

1240. I attempted recover some of the chicks outside up to this time. One ran to corner of gate and squeezed half-way through the 1/2" chicken wire; I gave him a boost the rest of the way. After cutting thistle along fence to clear the way, I caught one chick & returned it to the pen through the fence. At least 4 others were seen but dis-appeared in holes, under leaves, etc., before I could catch them or even spot hiding places accurately.

1555 Green ♂ with several small chicks in D-2. Counted 11 chicks as they ran down along NE fence.
1613 Chicks leaving weed patch into C-8 while ♂ is guarding in D-8.
1619. ♀ now appeared in C-8; the

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June 28. Strawberry Canyon, Alameda County. chicks are rather widely scattered in this general area, not particularly close to either parent. 1623. Whole family to water, then moved off into B-7; est. count still 11. 1632 Male Ø3 flew to top of large shelter, then back into cover after 1½ minutes. Green family now in A-9,10. 1652. Outside ♂ on top walked to A-8 and gave 3 assembly calls - does he see the 6± lost chicks? 1659 a ♂ flew from B-7 into Eucalyptus shrub in B-6. 1701 Green family in A-5; outside ♂ gave several assembly and squill calls. Fairly good count of 12 chicks. 1704 Another ♂ running along fence in A-7, and ♀ (05) with chicks in C-7 1706 Recounted 12 chicks certain in Green family. 1710 Checked outside pen by A-7 for chicks - negative. 1720 The ♂ in A-7 moved to A-6 and made very excited notes like starter pits - warning notes for chicks - but again looked outside and could find no signs of chicks. Cow! also heard outside at 1724, and assembly calls, as I ended obs. period.

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June 29. Strawberry Canyon Alameda County.
1730. Saw a ♀ with about a dozen downy chicks in central clearing as I approached, who went into cover as I entered. 1735 Single ♂ running along sa fence. 1738 Pair with many chicks came up from C-9 to C-7, then into grass - later saw Cam ♂ emerge from nearly same location.

June 30, Strawberry Canyon, Alameda Co.
1847. Φ3 ♂ emerged from weeds in E-6 and ran rapidly to East corner. 1853 Red ♂ came from weeds in D-8 into center clearing, then at 1856 ran rapidly to other side of D-4 eucalyptus. 1929 Red ♂ ran out toward center, then back around D-4 eucalyptus almost at once. 1930 Φ3 ♂ came from E-7 out to center clearing, then to B-7 eucalyptus. Heard two squill calls at 1932, and a ♂ came from B-7, then flew over to E-8. 1942. One ♂ chased another across the pen to East corner, and back and forth chases could be glimpsed here, one squill note heard.

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July 1. Strawberry Canyon, Alameda County. 0944 Green family came from the NE into C-3. 1000 Green family into B-4, under weedy cover. [See Journal p. 78 for entries to 1056] Searched area where last pair seen 1100 to 1120. Flushed a bird (unseen) in thick weeds in A-9, but careful search revealed no nest. Body of a small chick was found here, however, well dried out, probably a victim of exposure from first (Orange) brood. 1145 A pair with 2 or 3 chicks at edge of clearing in B-9. 1202 As an assembly call was heard outside the pen, a quail flew from the east to the south corner. 1210 Green family from C-9 to water hole, to B-6. At 1225 foraging in C-1 and C-2. Frequently the ♀ would apparently scratch up a choice food supply, and 3 or 4 chicks would feed right by her head. Verified certain count of 15 as they crossed clearing by the instrument shelter. Ended observations at 1232.

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July 2. Strawberry Canyon, Alameda County
0854. A series of Cow! calls inside the Behavior Lab. pen, and another ♂ walking on top of the pen in B-7.
0900 Green family left D-7 weed patch to forage in central clearing; another ♂ perched on tall grass in the center of this weed patch, then to water hole where all drank. No good count, but apparently all 13 chicks present.
0911 With Green ♂ and family in B-6, a ♂ was perched on tall weeds in A-9 and another on ground at edge of weeds in D-8. 0913 A ♀ also in D-8; a ♂ in E-9. 0916 A couple of fairly large chicks in D-8. 0933 Latter family came into central clearing, consisting of Orange ♂, Ø5 ♀, and 3 chicks, one smaller than the others; the two larger seem about large enough for short flights. Green family in C-8 at the same time. Orange chicks went to water hole and drank; ♂ on top of the pen above the Orange family. Two other ♂♂ in sight in A-9 and E-9. No sign of Yellow ♀ as observations terminated at 0941.

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July 3. Strawberry Canyon, Alameda County. 1508 In Behavior Lab pen. 1520 Green family in A-9, moving up to the NW. 1527 Two accurate counts of 11 chicks in this family. Red ♂ is visible along SW fence, moved into A-2 at 1531. 1540 Green ♂ with 2 chicks came from E-8 along weed patch to instrument shelter while ♀ and other chicks stayed in or behind weeds. 1545 a ♀ believed to be Ø5 walked up to weeds in E-1 without chicks or mate. 1552 With Green ♂ perched on instrument shelter, Black ♀ and chicks foraged across the central clearing, and about 6 chicks drank from the water hole. 1601 Heard a series of 4 Squill calls; a ♂ along fence in A-6, another in B-10; neither was seen to give this call. 1604 Green family in A-10, a ♂ on top of the pen outside in same area. 1635 Orange ♂ with chicks in C-8; Green still foraging over the pen with family (max. count still 11) and a ♀ in E-1. I could see a small but quite definite plume on one of the large Orange chicks. 1650. Green family all drank at water hole.

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July 4. Strawberry Canyon, Alameda Co. 1105 a family (Green?) foraging in the south corner. 1130. Family crossed to water hole, drank, and foraged in central clearing. Good count of 11 chicks. At 1136 they went into weed patch in C-8. 1140 One ♂ chased another around and in weed patch in D-8; a chick was visible near them. 1200. Checked area E-1 where ♀ was seen yesterday. Flushed a pair along NW fence - presumably φ3 ♂ and Yellow ♀. No sign of nest.

July 5. Strawberry Canyon, Alameda County. At 1915 I saw a pair and another bird as I approached the pen, who went into cover at once; an assembly call heard shortly then nothing until a squill call at 1929. At 1941 one ♂ perched on tall weeds in A-9. 1945 Another ♂ in A-10 as the first ran up the fence. 1946. A pair in A-10 and Red ♂ in A-4 clearing. 1950 another ♂ at edge of clearing in B-9, while one still visible in A-10. 1959. Red ♂ came into B-9 from A-9, feeding, then walked into B-10 weeds

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July 5. Strawberry Canyon, Alameda Co.
2006 A pair with no chicks crossed B-8 to B-7 eucalyptus. 2009. Pair left B-7 eucalyptus for water hole and center clearing - identified as Φ3♂ and Φ5♀ - this is not (or rather has not previously been) a mated pair. 2011 This pair dust-bathed as another pair was seen in a chase around E-9 eucalyptus, one flying up into the brush. 2014. A ♂ flew from the base of E-9 eucalyptus up into it. 2015 Pair completed dust bath and walked toward E-9, feeding and preening, then walked under the eucalyptus shrub, as two birds (one a ♂) flew to ground from the brush. 2022 Green ♂ ran rapidly from C-9 to center clearing and fed for 2 minutes, then ran to the base of E-9 eucalyptus, and flew into it.

July 6. Strawberry Canyon, Alameda Co.
1602. Red ♂ near fence in Behavior Lab. pen, area E-3, with another ♂ just outside the fence. 1608 Orange ♂ climbed to exposed perch

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July 6, Strawberry Canyon, Alameda County. near the top of the B-7 eucalyptus, and gave a series of rapid chips. (This is the ♂ left with 3 chicks by his mate, who was seen yesterday with ♀3♂). 1620 Caught a glimpse of what appeared to be a half-grown quail feeding in A-9, as Green ♂ with chicks appeared in B-4; Orange ♂ still on same perch, but silent for past few minutes. 1622 Orange ♂ left perch into cover. 1625 Red ♂ on the ground in D-4. Green chicks continuing to forage, as much as 12 feet from ♂ in thick cover; no sign of ♀ with this brood as yet. 1628 Red ♂ ran to E-4 behind Eucalyptus as Green family moved toward water hole. 1634 Green ♂ with chicks (more than 8, but no accurate count) went into cover in B-9; the ♀ is definitely not with this brood.

July 14. Strawberry Canyon, Alameda County, Calif. Several quail flew from center of Behavior Lab pen to cover as I approached at 1830. At 1853 I noted a ♀ feeding on freshly scattered grain. After a call from

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July 14. Strawberry Canyon, Alameda County. a male in C-8, she flew down to join him; a half grown chick also flew to them, and the group, with possibly another half-grown chick, walked into grassy cover. None were identified.

July 15. Strawberry Canyon, Alameda County. 0930 Green ♂ on top of instrument shelter, then flew to ground where he was followed by a number of chicks D-5 to E-7. 0950 Green ♂ perched a weed clump in E-6, while 3 or 4 chicks glimpsed foraging in weeds nearby. At 0953 the group moved out toward center clearing, followed by about 6 (?) other chicks. 0959 Green ♂ flew to perch near top of B-7 eucalyptus as chicks foraged below, ignoring nearby water hole. 1006 Green ♂ flew down to water hole as 4 chicks came to drink, then flew back to perch as 3 other chicks came out of the weeds - I could count only 7, but they are scattered so that probably only part could be seen at once. At 1010 three of these chicks flew about 10 feet from C-6 back to

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July 15. Strawberry Canyon, Alameda County. the base of B-7 eucalyptus. All the chicks then went into cover of weeds while Green ♂ remained standing on one feet on a small branch of eucalyptus bent over to a horizontal position. 1019 Green ♂ extended the other (right) foot, scratched his right side and neck, and withdrew the foot into belly feathers again; the entire leg and foot are completely out of sight in this stance. 1025 A pair, unidentified, without any chicks, came from weeds in E-6, crossed the clear space in D-7, and ran into the East corner. 1029 Green ♂ now standing on two feet; then flew down to ground at 1030 and went into cover in weeds with his chicks. thence across to instrument shelter where he perched at 1035 as chicks went into E-6 weed patch. 1038 One pair near E-9 eucalyptus and another pair in C-9. 1045! Both pairs and Green ♂ with 7 chicks near water hole, and a ♀, then later another ♂ near E-9 eucalyptus. One pair appears to be O3 ♂ and O5 ♂. The two from E-9 crossed

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July 15. Strawberry Canyon, Alameda County. into D-8 weed patch together — there appears to be a complete reshuffling of pairs following either loss or weaning of young. 1050 The last noted pair came to the water hole and drank, then foraged together in the center clearing; identified as Orange ♂ and Black ♀; her former mate, Green ♂ paid no attention, even when the pair was within 10 feet of him. 1058. Another pair feeding in B-5; Green ♂ in B-4 commenced calling his chicks, and the ♂ from B-5 approached and they scuffled briefly — on ground level without jumping up in typical cock-fight manner. 1100 Two pairs, the Green family, and one ♂ all in sight at once, plus a ♂ walking on top of the pen over the area where the brood is feeding. 1107 Two chicks, appearing larger than the Green brood, flew from B-3 to B-7 and 8 — a distance further than any of Green's chicks have been seen to fly. These are probably the fully weaned chicks of Orange and O5. Ended obs. at 1115.

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July 16. Strawberry Canyon, Alameda County. 1500. As I entered the pen at the Behavior Lab, there was one ♂ in "guard" position in B-9, and another ♂ in A-9. 1505 the B-9 ♂ preened and I saw at least one chick nearby – then after 1 minute they went into weedy cover. 1510 (estimated time; watch stopped – I set it ahead and rewound – subsequent times todays notes subject to correction). I sounded "assembly call" an artificial call. An answer was given from very close, then a ♂ ran to the fence in area A-1 as a more distant assembly call was given. 1517 Φ3 ♂ gave assembly call from water-hole then flew to perch on top of instrument shelter and repeated it – this is probably same ♂ seen in A-1 just before. 1520 ♂ with chicks in A-6 as ♂ Φ3 and ♀ 05 drank at the water-hole. The former is green – with undetermined number of chicks scattered around; I counted only 5 but others were in the weeds. 1523 Another pair with two larger chicks in B-8, moved behind the B-7 eucalyptus. 1527 The ♂ of this

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July 16. Strawberry Canyon, Alameda County. pair flew to a perch on B-7 eucalyptus, and identified as Orange. The ♀ with him drank, but was not identified - meanwhile Green family crossed by the water hole and I got a good count of 8 chicks. 1529 Ø3 ♂ and Ø5 ♀ came close to the ♀ with Orange; she was identified as Black. Ø3 ♂ chased her (Black) for two rushes, then Orange ♂ flew to ground a a "battle" ensued consisting of a number of rushes and about 3 face to face "cock-fight" encounters, accompanied by "squill" calls; Orange eventually drove off Ø3 ♂. 1534 Orange and Black moved into B-3 feeding with 2 well-grown chicks The remaining pair (Red ♂ and Yellow ♀ have not yet been seen). The chicks of Orange have plumage well grown, tail over and inch long, and body contours beginning to approximate the adult shape, except for the head. 1540 Noted a pair with chicks outside the fence, 1557. Orange ♂ flew up to perch in B-7 eucalyptus and

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July 16, Strawberry Canyon, Alameda County. gave a series of 3 assembly calls. A large chicks flew to the area nearby and Black ♀ walked toward him. He then flew to the ground and the pair crossed the center clearing, followed by the two chicks, and went into the weeds in E-4. 1610 Green ♂ with 8 chicks and Orange-Black pair with 2 chicks crossed in center clearing with no interaction. Another pair has been patrolling the SE fence for some time - not identified - and another ♂ noted in B-10 at 1615. 1635. Ø3-Ø5 pair left B-5 and fed in center clearing, then moved to D-8 where ♀ disappeared in the weeds. 1640. Black ♀ with 2 chicks feeding while Orange ♂ perched on instrument shelter. 1643. Ø3 ♂ walked over behind weeds in E-8, not accompanied by Ø5 ♀ 1647. Orange-Black and 2 chicks behind D-4 eucalyptus. Entered pen to search area where Ø5 ♀ was last seen. No signs of nest, but as I approached 2 ♂♂ gave a series of "Plit" notes, then these two

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July 16. Strawberry Canyon Alameda County.
plus another bird (apparently ♀) flew to to NE corner.
* Watch correction - add 25 minutes to all times from 1510 on (35 minutes to prior times).

July 17. Strawberry Canyon Alameda Co.
0855 Heard 2 assembly calls and saw a bird moving in weeds in C-9.
0908 Saw a pair and one large chick feeding along the fence in E-10. The chick continued on, out of sight, as the pair continued patrolling the fence and feeding. 0914 Heard a single "cow!" call. 0920 A ♂ in "guard" position in A-10; ident as Green, several small chicks in this area. 0928 Two ♂♂ in E-10, plus at least one large chick and one ♀. 0933 The Φ5 ♀ flew from east corner to top of instrument shelter, then into weeds in back of D-4 eucalyptus, as a ♂ ran rapidly across the clearing to the same area.
0935 Orange-Black pair with 2 large chicks crossed from E-8 to the water hole, with the third pair (presumably Red-Yellow) visible in the east corner. The ♂ and both chicks drank, then

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July 17. Strawberry Canyon, Alameda County, all went into weeds in C-8. 0939 Green ♂ and chicks foraging in B-5. 0942 Green family (good count of 8 chicks) drank at water hole and went under B-7 eucalyptus. 0943 Another pair (Ø5-Ø3?) drank at water hole and flew quickly back to east corner. With all birds accounted for, ended obs. at 0945.

1355 Resumed observations in the pen. Orange ♂ and Black ♀ in E-1, the ♀ staying in weeds + grass along the fence except for one short excursion into the open, while the ♂ moved about much more. 1400 Ø3 ♂ came from C-8 to the water-hole, but did not drink, then walked to instrument shelter + flew to the top, where he perched 3 minutes, then flew down and ran under B-7 eucalyptus – no ♀ seen with him. 1405 He then fed near water hole and walked over + behind E-9 eucalyptus. 1435 A ♂ in guard position in A-10; Orange and Black still in E-1, but moving very little. 1442. Several chicks with ♂ in A-10; another ♂ in E-10; Black ♀ still in E-1

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July 17. Strawberry Canyon, Alameda County, but Orange ♂ not now in sight. 1458. Several chicks with ♂ in E-10, the size of Green family. Assembly calls heard outside the pen. 1516 Green ♂ and 8 (poss. 9) chicks came out from under B-4 eucalyptus, then ran back when startled (by machinery noises nearby?) 1518 Orange and Black ran across clearing to water-hole and both drank; they then moved slowly into B-4, feeding, and Orange ♂ perched on top of a tall weed. At 1525 the two large chicks of Orange moved into this area from another direction — "weaning" is apparently occurring but incomplete as yet. The adults, seen with binoculars at close range, have no detectable signs of molting. 1534. ♂ with several small chicks in D-7, Orange family still in B-4 with ♂ on same perch, others in the weeds, feeding. 1538 ♂ with chicks crossed from D-7 to E-9 eucalyptus, and a pair seen along fence in E-10. 1542. Two assembly calls heard from outside; ϕ3 ♂ perched on instrument shelter; Orange ♂ on his same perch.

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July 17. Strawberry Canyon, Alameda County. 1546. Orange family to water-hole, Black ♀ and chicks drank, then followed ♂ into clearing where all fed. As they approached the instrument shelter, Orange gave a single "squill" note and ϕ3 ♂ at once flew down from his perch on the other side. 1548 Orange family went into cover near D-4 eucalyptus as Green ♂ and his chicks moved into E-1. 1550 ϕ3 ♂ ran across from E-6 to C-9. 1553 Green ♂ and 8 chicks ran down NE fence. 1556. Green ♂ perched on weeds in E-6, and I observed rapid pulsations of the throat with bill parted, but heard no sound. One of the small chicks ran rapidly into the weed cover as he did this – this performance was noted previously – it appears to be either very low calls or in an inaudible frequency range. These pulsations, at a rate of about 4 per second, were repeated at 2 minute intervals until he left the perch at 1602. At 1605 two more assembly calls from outside; ♂ with small chicks in C-10; at 1608 the latter were in B-9 where the ♂ perched in a small Baccharis.

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July 17. Strawberry Canyon, Alameda County. 1615 Saw a pair along the SE fence, and an outside ♂ flew down from the top of the pen as I filled the water hole.

July 19. Strawberry Canyon, Alameda County. 0950 at behavior lab pen, a ♂ in A-9. 0955 ♀ and 2 large chicks nearby in A-8, feeding. 1000 a ♂ with at least 1 chick at edge of weeds in C-9; 1002 ♂ with several chicks crossed from other side of weeds (D-8) into E-7; about 6 small chicks were seen following the ♂. A ♂ perched on top of the pen (outside) over B-8. 1005 Green ♂ perched on instrument shelter as chicks foraged nearby; pair with 2 large chicks in A-7. 1009 Green family all in cover, Orange family in A-5, all feeding. 1019 Same group in A-4, checked colors as Orange ♂ and Black ♀. 1025 Green ♂ and 8 chicks (accurate count) feeding busily in C-2 after crossing from D-4. Juvenal plumage becoming well established in these chicks over the back, head & belly still downy. Primaries are

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July 19. Strawberry Canyon, Alameda County. particularly noticeable, while retrices are only rudimentary. 1030. Orange family feeding in A-2, close to the observation hut. For the first time I noted the two chicks giving the typical "stretch" — extending a foot backward and spreading the wing on the same side. All wing feathers appear to be fully developed, with juvenal contour feathers over most of the body and the retrices quite well developed but not yet proportionally as long as in adults. 1025 This family flew to about B-7, then walked to water hole. The flight of the chicks is quite similar to that of adults. 1040 Black ♀ preened extensively, with one chick huddled close beside her, as Orange ♂ perched in B-7 eucalyptus. 1045 Discovered a nest with 3 eggs next to the fence in A-5, in the area where ~~S~~ Black ♀ spent a few minutes in the course of feeding in this vicinity. A fourth egg was on the ground about 4 feet away. This nest is just 12 feet away from Black's first nest. I col-

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July 19. Strawberry Canyon, Alameda County, lected the extra egg, weight 9.1 gms. - Later examination showed this egg to be perfectly fresh with no embryo development.

1900 Resumed observations. Checked A-5 nest, still 3 eggs. 1912 Two half-grown chicks flew from in front of hut to C-8, then back to water-hole. No adults with these chicks. 1937 a ♂ perched on weeds in A-8 as the 2 chicks are feeding, and a pair along the fence in A-10. 1941 a ♀ feeding near the ♂ in A-8, 1943 a third ♂ along fence in C-10. 1953 Red ♂ and Yellow ♀ feeding in A-7, Orange family in B-8. 1955 Orange family passed water-hole and fed in center clearing: 1957 Φ3 ♂ crossed from C-8 to North corner, Orange ♂ chased Red ♂, and all birds ran + flew into nearest cover. 0800 Red ♂ crossed clearing, gave several series of "chips" such as parents use to chicks, flew to top of instrument shelter for less than a minute, then flew into D-8 weed patch. Orange family meanwhile walked over to E-9 eucalyptus,

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July 19. Strawberry Canyon, Alameda County, and were lost sight of there. 2005 A chase of one ♂ by another took place in E-10, a third ♂ and 2 ♀♀ visible nearby. 2007. Two squill calls heard and more chases around the east corner. 2015 Red and Yellow came from behind eucalyptus in E-9 and dusted as the Orange family foraged out from the instrument shelter; then Red + Yellow foraged in C-6. 2018 Ø3 ♂ came to water-hole, then across clearing + was chased by Red until they came near Orange, and Orange chased Red back again. 2020 Entire Orange family dusted. 2021 Yellow ♀ flew into E-9 roost, followed by Red ♂ at 2022. 2024. Orange family went into E-4 weed patch. 2026 (See journal for notes to 2035) 2024 Ø3 ♂ ran back to E-4 eucalyptus and flew up into it.

July 20. Strawberry Canyon, Alameda Co. 1245 at behavior lab. pen - about 3 birds moving along the fence in

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July 20. Strawberry Canyon, Alameda Co.
E-10, no birds in the open. 1300 Birds in E-10 seen to be a pair with two large chicks - obviously the Orange family. 1315. Heard two assembly calls - either inside or close outside the pen. 1317 Green ♂ perched on B-7 eucalyptus gave several series of plits & one small chick was noticed to fly to the base of the eucalyptus. 1321 Six more small chicks flew from weeds in B-9 to the base of the B-7 eucalyptus - Green ♂ still perched, giving clucks & soft "conversational notes. 1326. A ♂ at the edge of weeds in D-9, Green still on perch with chicks foraging below. 1335 A ♂ in B-9, walked slowly into weeds. Green still on perch, chicks not in sight.
1355 Green ♂ flew to the ground and led 8 chicks across the pen to E-7. 1402 Orange family to water-hole, all drank and returned to cover at 1405. At 1408 I checked nest in A-5 and found 4 eggs - laying is continuing.

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July 21. Strawberry Canyon, Alameda co. 1245. Found 5 eggs in the nest in A-5.

July 21. McMillan Ranch, San Luis Obispo County. In the vicinity of Shandon on the way to the ranch, noted 4 ♂ quail perched on fence posts, and one ♂ crossing the Road with half-grown chicks. Observed the following at the water-hole in front of the ranch house: 1940 Adult pair, followed by a group of 7 ♂♂ and 2 ♀♀. In the next half-hour, over 40 birds assembled in the clearing in front of the house, besides a number out of sight in the shrubbery. About 30 birds were in a loose group, without very obvious pairing, a number of pairs had chicks from half grown to one brood almost completely grown. A smaller group of birds were feeding in back of the house.

July 22. McMillan Ranch, San Luis Obispo Co. I listened to quail leaving the roost from early daylight to about 0730 when most birds had

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July 22. McMillan Ranch, San Luis Obispo Co. Scattered. There were many loud assembly calls during the process, considerably more than earlier in the season, when more birds were occupied with nesting duties. At 0740 a pair with 3 downy chicks drank at the water hole. At 0748 a group of 4 ♂, 4 ♀, and 2 nearly full grown young ♀ drank at water-hole.

0840 At Marian Springs blind. Many assembly calls heard all around. 0847 Two pairs of adults with a large group (c. 20) 3/4 grown chicks, and another ♂ nearby, went up the slope to the left. 0855 a ♀ with 7 large chicks followed by a pair of adults crossed above the spring. Two large broods in sight on the hillside. A Pair with 16 large chicks at water, an adult pair & a single ♂ from the other side. 0858 another brood with about 10 the same size - broods mixed somewhat and scattered. Pair with 14 large young on hill to left. Many birds all around - count

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July 22. McMillan Ranch, San Luis Obispo Co. very uncertain, but at a minimum as indicated. Several "Cow!" calls heard. Pair with 8 large young came to water hole from canyon to the left at 0902. / 0903 Pair with 5 large young on hillside above spring, one downy chick nearby and an adult ♂ above him. Birds ~~scattered~~ at some alarm + then straggled back to water. 0906 Birds again scattered - I deliberately left blind to scatter them thoroughly in order to recount as they returned, and flushed, conservatively, 150 birds around the spring, mostly 3/4 grown young, few adult pairs without chicks. Incessant overlapping assembly calls were heard from all over the hillside for several minutes after this.

0915 Pair + 5 on hillside to right.
0916 ♀ + 11 under Juniper above spring.
0919 2 pairs with 5 chicks each, about 1/2 grown - smaller than others.
0922 Group of at least 17 on hill to left.
0924 Pair + 6 drinking across fence.
0925 ♀ with 11 going up-hill, ♂ on guard on a nearby shrub.

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July 22. McMillan Ranch, San Luis Obispo County.
0929 Seven quite small chicks to water, followed by a ♀, then 2 ♂♂ and another ♀ with 4 more chicks. These are quite small, with only rudimentary retrices as yet.
0931 Single nearly full grown ♀ (plumage nearly adult, legs & feet pink) at water.
0934 ♀ with 9 chicks ½ grown - one appears to be a least a week older. An adult pair on hillside to the left.
0937 Another pair with about 5 large chicks mingled with the 0934 group, then retreated into the brush.
0939 Pair with 7 large chicks (4-5 weeks)
Pair with 6 small chicks (3 weeks)
Adult pair (~~same as~~ 0934)
0941 Numerous chases and a few "squill" calls as broods mixed.
0942 7 large chicks to water with ♀, ♂ nearby. Another male observed to peck at the nape of a very small chick several times.
0943. A rather compact group of 30 or more ¾ grown chicks with 3 or 4 pairs of adults on the hillside 0945 Counted 24 in this group with one ♀; a

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July 22. McMillan Ranch, San Luis Obispo Co.
nearby ♂ may have been with
them. Two downy chicks near
water hole, no clear attachment to
any adult. Continuous clucking, +
assembly and many squill calls
as many broods assembled near water.
0947 a ♀ made repeated rushes
and pecks at a brood of about
7 small chicks (about 3 weeks),
apparently trying to scatter them.
0948 Pair with 4 downy young, followed
by another ♂.
0949 Pair leaving water with 7
downy young - returned, and a
recount showed 8 chicks.
0951 ♀ with 1 downy chick.
Pair with 3 nearly grown young,
followed by another ♂.
0953 Mixed group, 2 ♀, 10 nearly
grown young, ♂ nearby.
0954 At least 3 broods mixed at opt
side of water-hole, 6-8 chicks each,
nearly grown - much chasing.
0955 Group of 18 3/4 grown without
obvious parents accompanying them.
Again at least 150 birds in the
vicinity with continuous calling
and much interaction

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McMillan Ranch, San Luis Obispo Co.
July 22. ~~Strawberry Canyon, Alameda County~~

~~10~~ 0958. Adult pair lone ♂ and 3 nearly grown chicks at water.

~~10~~ 0959 Pair with 14 half-grown chicks from canyon to the left.

1000 Pair with 2 nearly grown young.

1001 Two adult pairs - no chicks.

1002 Two pairs with 12 or more half-grown chicks on hill to left.

1004 Two pairs with 6 chicks of two sizes - 1/2 to 3/4 grown.

♀ with 8 half grown chicks crossed hill as a ♂ chased another ♂ away from the vicinity.

1006 From 20 to 25 3/4 grown young around the water, with 4 ♂♂ and apparently only 1 ♀.

1007 Another large brood (est. 15) of nearly grown young with one ♂ (♀ not seen) at water across the fence. These chicks over six weeks since ♂♂ are clearly distinguishable.

There are now too many birds around to distinguish new birds from those previously counted, or to separate broods. Calls are continuous - mostly assembly calls. 1011 Counted a total of about 175 birds in sight at once.

1013 ♀ and 10 nearly grown chicks left water down canyon.

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July 22. McMillan Ranch, San Luis Obispo Co.
1016 5 adult ♂♂, 2 adult ♀♀, and about 12 young from 3-7 weeks at the water hole together. All birds suddenly scattered.
1017 Three apparently adult ♀♀ to water. 1018 2 ♂ and 1 ♀ came down hill, no chicks.
1020. Pair with 3 small chicks went up canyon from upper seepage.
1021 8 ♂♂ and 1 ♀ resting in the shade of the juniper opposite spring.
1023 Adult pair, 6 3/4 grown young, and another ♀ at water.
1024 A ♂, and adult pair, and a nearly adult young ♂ to water. Then a mixed group of adult and sub-adult birds, mostly ♂♂.
1026 4 adult ♂, 1 adult ♀ 1 subadult ♂, 1 subadult ♀ at water. Another adult pair to water from the left. This is apparently the beginning of covey formation — note that it does not involve consolidation of broods, but aggregations of individuals and pairs.
1028 Adult pair and a ♂ to water.
1030 Nine adults to water from uphill, as nine adults came to water across the fence,

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July 22. McMillan Ranch, San Luis Obispo Co. where a pair with about 6 large young are drinking. 1035 All birds have scattered, few chips and assembly calls nearby. 1040 No quail in sight, calls have died away in the distance - apparently we have a mid-day break.

1115 At the water-hole in front of the ranch house, adult pair came to drink, 1116 ♀ left and 2nd ♂ came up then 6 chicks with retrices just developing (4 weeks). Chicks, then ♂ drank, also a 7th chick. First ♂ stayed nearby giving continual series of chips in groups of 3 to 5. Family left, and ♀ with 4 chicks, then a fifth came to water and all drank, including the ♂. The ♂ made several pecks at one of the chicks that came near him.

1122. Two chicks drinking, ♀ nearby, both ♂♂ out of sight.

— Back at Marion Springs blind no birds were seen from 1510 until 1601 when a group of 11 came across the opposite slope from the left.

1605 Pair + 10 chicks 3/4 grown.

" ♀ + 4 chicks 3/4 grown, plus a ♂ which remained on the hillside,

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July 27. McMillan Ranch, San Luis Obispo Co.
then joined the others at the water, the two broods intermingling. 1611 The quail ran and flew into the brush as a small herd of cattle (10) came to drink at the water trough. 1626 Water trough again clear of cattle.
1631 a pair to drink, across the fence. The ♂ walked up the hill into cover (or shade) while the ♀ foraged among ~~cow~~ cattle droppings near the water trough. at 1645, the ♂ returned to chase a Scrub Jay, then both went up the hill, and returned at 1647, then up the canyon to the left.
1716 - ♂, 2 ♀♀, and 6 half-grown young.
1723 - A single ♂ from down canyon.
1723 - A nearly grown young ♀, from the hill.
1725 - Nearly grown young ♂; plumage essentially adult except the head and incomplete black throat.
1728 - ♀ with 6 3/4 grown young, joined by a ♂ with 2 more young.
1729. - The young ♂ (1725) was chased by the ♀ of a pair at the water-hole.
1730 - Two ♂♂ and two ♀♀ with at least 23 young nearly full-grown (sexes distinguished by black on ♂♂).
1731 - Two young ♀♀, nearly grown.

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July 22. McMillan Ranch, San Luis Obispo Co.
1736. 13 nearly grown young, with 1 or 2 adult ♂ who appeared to join with them, after having preceded them to water by two minutes. One ♀ also came to water about this time from the same direction.
1739 10 of the above with 2 adult ♂♂ passed the water trough going up-canyon.
1740 3 others of same group with 1 adult male passed water trough, went up-hill. A ♀ is crouched low, or lying in the dust in shade of a low rock wall, for the last 4 minutes, then crossed fence & walked uphill alone.
1743. Pair with one nearly grown ♀.
1750 3 Pairs, no young.
1755 A pair, no young.
1800 Only a few calls being heard; left blind.

— Summary of brood counts today:
Marion Spring:
a.m. 83 ad./343 young. 68 adults w/o young
p.m. 13 ad./55 young. 11 adults w/o young.
Ranch House:
a.m. 64 ad/196 young. 41 adults w/o young.
p.m. 20 ad/85 young. 62 adults w/o young.
Ratios: Marion Spring — 398 young/175 adults.
Ranch house — ~~[illegible]~~ 181 young/187 adults.

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California Quail

July 23. McMillan Ranch, San Luis Obispo County.
0745. At Marion Spring blind, about half-a-dozen quail scattered as I approached, and some assembly calls heard after I settled in the blind; activity rather low compared to other periods.
0750 Two pairs, about 12 4-week chicks.
0752 A pair across fence; the ♀ squatted as the ♂ passed her, then got up and ran after him. More calls heard.
0754 Same group as 0745, 14 chicks counted at seepage up canyon.
0754 Pair at water trough.
0757 Pair with 10 5-week chicks.
0758 Adult pair at water hole.
0759 Eight 5-week chicks, with a lone ♂ not too far away.
0800 Two adult pairs, 4 4-week chicks
0801 Pair with 14 4-week chicks to water trough from up canyon. A ♂ chased ~~an~~ older chick away from water.
0803 Adult pair, plus imm. ♂ and ♀ barely 6-weeks old. One lone ♂.
0806 Pair with 6 6-week young resting on sunny slope across the fence.
0807 A pair with 2 6-week young. An occasional "Cow" call is heard, along with frequent assembly calls ~~and~~ nearly constant low clucking.

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July 23. McMillan Ranch, San Luis Obispo Co.

0813 Pair + one ♀ and 10 4-week chicks. About 6 immatures - 6 weeks.

0815 Two adult ♂ + 3 6-week ♂ at water. Lone ♂ calling near seepage up-canyon.

0820 Pair with 14 5-week chicks, with another ♂ nearby.

0822 Pair with 4 chicks nearly 6-weeks.

0823 Hen of the 0820 brood chased 2 of the chicks away, as the brood drank.

0828 A lone ♂

0828 A six-weeks ♂ with 4 others a few days younger.

0829 A ♂ with one small chick < 3 weeks.

0830 A pair with 6 5-week chicks.

0833 A pair with 1 3-week chick.

0835 4 5-week chicks, unattended. An adult pair at water trough.

0836 Pair with 5 5-week chicks.

0837 Pair with 9 4-week chicks.

0838 Pair with 3 4-week chicks.

0839 Two adult pairs and a lone ♂

0840 Group of 9 adults and immatures over 6 weeks - mostly ♂.

0841 Two adult ♂♂ with 10 young both 5- and 6-weeks old.

0842. Pair with 2 3-week chicks.

0843. A total of about 20 full-grown birds foraging in loose groupings - with some antagonism displayed.

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July 23. McMillan Ranch, San Luis Obispo Co.

0845 about 7 adults across fence, two 5-week chicks, one chased away.

0846 an adult ♂ chased and scattered a brood of 5 5-week chicks.

0848 7 ad. ♂♂ and 3 ad. ♀♀.

0850 ♀ with 11 6-weeks young.

0852 ♀ and ♂ with 8 2-week chicks. ♀ with 4 6-week chicks.

0854 About 15 6-week chicks with 2 ♂♂ and 1 ♀.

0855 Two adult pairs.

0856 About 15-20 adults and immatures around seepage up-canyon; a full-fledged cock-fight between 2 ♂♂ here involving a dozen leaping encounters and three chases before the loser finally left the group. Quail are now milling all over the water holes and hillsides, so that it is impossible to keep track of any new arrivals. 16 of various sizes - ~~some~~ smallest not quite six weeks, - drinking together below the water trough. Family groupings are fairly loose now, although there will every few moments be seen a compact group with an adult in charge moving to a from the area. Most of the birds in sight

California Quail

July 23. McMillan Ranch, San Luis Obispo Co.
are adult or nearly full grown immatures and mix randomly when drinking and feeding around the spring.

0906 ♀ with 3 5-week chicks. The birds were startled by something at this point and all flew or ran up the hill a short distance into cover; I estimated ~~nearly~~ 200 birds around. Incessant overlapping assembly calls followed, and birds began returning to water in 2 minutes.

This mornings observations now appeared to have overlapped yesterdays sample, so I discontinued counts.

1100 Returned to the blind for mid-day observations. No birds in sight after cattle chasing.

No birds seen until 1155 when 5 apparently full-grown quail noted on top of second ridge down canyon, and more frequent assembly calls heard nearby. 1200 Calls receded in the distance and no birds in sight, so ended observations.

~~1345 Left McMillan Ranch for Hunter Liggett Military Reservation at 1:45, mileage 43031.~~

California Quail

July 24. Hunter Liggett Military Reservation, Monterey County Calif. 0945 Flushed about 100 quail at artesian well seepage near cattle watering trough. these appeared to be adults and nearly full grown immatures, with no very small birds. 1000 Sighted a pair along the road with about 9 downy young, not over a week old. No quail seen at the two guzzlers visited. About 1115 saw a ♂ along the roadside on the San Antonio River who went into cover, then flushed when closely approached, followed by a ♀. No nests or young found, in search of thistle clump where they were flushed.

On evening drive over the same roads gave the following observations:

1810: Pair without young
Single ♂
♀ with 11 3-week chicks
Pair with 1 4-week chick.
1817: Pair without young.
♂ perched on brush (guardian).
1825: Two pairs with total of 15 young, two sizes, about 4- and 5-weeks.
Single ♂.

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California Quail

July 24. HLMR, Monterey County.
1840. ♂ of 1817 plus ♀ and 14 nearly grown immatures flew down from tree to ground.
1900. Single ♀ at guzzler #3.
1940. Covey of about 30 quail on hillside above road.
1950. Pair plus 9 nearly grown young.
2000. Flushed covey of about 20, Pair with 6 4-week chicks
Covey of 23 nearly grown.
2015 Pair with about 20 nearly grown young.
Summary of this evenings counts:
8 adults with 67 young birds.
7 adults without young.
73 birds in coveys (adult + young).
Road distance covered: 8.3 miles.

July 25. H.L.M.R., Monterey County.
0840 Saw only 2 guarding ♂♂ on fence posts in circuit of the same roads as yesterday.
1015 A second circuit of roads beginning at this time and ending at 1125 gave the following counts:
1015: Family group with over 5 immature birds
Adult pair; heard squill calls.
Single male - guardian.
Adult pair

California Quail.

July 25: H.L.M.R., Monterey County, Calif.
1025: Adult pair.
Pair with 11 chicks, 3-4 weeks.
Adult pair
Single ♂.
♀ with several immatures.
Adult pair with 12 nearly grown young.
♂ with 2 chicks 4 weeks old.
Summary of this census:
8 adults with 37 young.
10 adults without young.
No coveys seen.

July 25. Hastings Reservation, Monterey Co.
1705. Heard a ♂ giving repeated loud rapid assembly calls and at 1720 sighted him in an oak tree west of the Davis house, when he flew down into the gully. The quality of his call suggested an unmated ♂.
2025 Saw an adult pair in the vicinity of the large Ceanothus in the lower part of Quail Hollow. They ran uphill behind the brush, giving a few very low clucks, then in less than a minute went back down the hill, giving louder clucks and chips; I would guess calling a brood of young.

California Quail

July 25. Hastings Reservation, Monterey County.
As I left my observation point after a few minutes, a bird flew up into the oak trees (used as a roost by the covey last winter) and a series of "Plit!" notes were given by a bird on the ground. As I walked nearby, two other (?) birds flew. I am fairly sure of at least 2 pairs roosting here with the possibility of a pair with a brood nearby or also roosting.

July. 26. – 1128 Heard a bird flush from roadside brush at the lower end of the Long Field; then saw a single ♂ perched in a small tree at the creek's edge, in "guardian" posture. On closer approach, he flew to an oak on the opposite hill, and gave a long series of clucks & chips, and a ♀ flew into the thickets in the gully & also gave clucks as if calling a brood, however the latter could not be flushed.

1750 A pair flushed from in front of new office and flew down to gully.

1800 Heard a number of birds around the old office and glimpsed several small chicks in the bushes, then a pair followed by 3 nearly

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July 26. Hastings Reservation, Monterey Co. grown young flushed and flew across the gully as Ginger saw another pair run toward the barn. 1823 Four birds flushed from the gully alongside the barn, appeared to be 2 pairs, probably including a pair previously seen. 1934. Two ♂♂, one ♀, and 4 nearly grown young flew from in front of White house to nearby oaks, followed by 3 others, apparently adult. 1935 Another pair flew from same area to brushy hillside. 1937 A pair near gully, and an immature flew into brush near house. These birds refused to flush but remained in the group of oak trees when Ginger attempted to disturb them. 2005 A pair flushed from Ceanothus & flew into oak tree in back of Davis house; the noise indicated possibly 1 or 2 more pairs.

July 27. Hastings Reservation Monterey Co. 0625. Quail could be heard in or near the large oak where they went to roost last night. 0633 Many clucking and assembly calls, and a series of "squill" calls as birds were heard flying near the oak. 0637 adult pair, returned behind covering shrubs.

California Quail

July 27. Hastings Reservation, Monterey County.
0639 Two ♂♂, one ♀ on road, into gully.
0642 Pair in front of house (same as 0637?)
0646 Pair in front of house (4 in sight).
0648 ♂ with 4 5-week chicks - birds were startled + all ran to bushes together, and a chase of one male by another.
a ♀ and one small bird glimpsed at right edge of bushes.
0654 2 adult pairs to right of bushes, may include one pair repeats.
0655 2 other pairs in front of house.
Minimum of 5 different pairs, plus ♂ with 4 young seen.
0659 Adult pair ran up drive and into gully - this is 3 pairs which have moved away in this direction.
0707. Squill calls heard, with 2 groups near edges of brush patch not involved.
0709 Adult pair ran up road to right, as birds feeding in front of the house took cover as Dick Root came by.
0714 The ♂ with young and an adult pair ran up the road where an assembly call was heard from the gully.
0725 No quail noises for 10 minutes; 15 birds seen to go up the gully, at least 2 pairs + a probable brood were also in this area and moved

California Quail

July 27. Hastings Reservation, Monterey County.
off unobserved. 0730 As I walked under
the large oak near the house, I
disturbed several quail in the tree,
(prob. 2 pairs) then heard nearby
a series of chips and an assembly
call. I walked up the road to
the fence below the barn, and saw
six different pairs of adults. At 0740,
near the water hole in the gully,
most of these seemed to be giving
alarm calls & flying in the trees
along the gully. No young birds seen.
0752. A single ♂ by the Davis
wood pile. Others heard in Ceanothus
and chamise brush on the ridge.
0905 Flushed about 20 birds
near the barn - there seemed to be a
number of nearly full-grown young,
but was unable to get a count.
1005 Many chips and clucks, some
assembly calls the last hour, but no
birds showed themselves along this
stretch of stream. "Cow" calls heard
on right bank of stream at this time.
1010 to 1015 Circled the stream
area and flushed a ♂ with
several nearly grown young, then
8 to 10 larger birds in a group
near the barn. This appears to

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July 27, Hastings Reservation, Monterey County.

be the same group of birds seen earlier
1045 Jim Bell reported seeing a covey of about 50, mostly immatures, at the bridge just outside the reservation gate.

1652. Saw a pair on the road at the upper ford - many chicks heard as they went back into the brush.
1705. Near the bridge where the covey was reported this morning I noted many tracks crossing the road in both directions, no quail up to 1757.
1900 No new tracks in the interval I was gone from this location. 1952 No quail seen or heard since taking this post.

July 28. Strawberry Canyon, Alameda County.

1400 ♀ incubating 11 eggs in nest in A-5; one egg spotting is much paler than the others, with a purplish tinge. Noted several young with a male, able to fly well. Observed until 1445, ♀ did not return to the nest - is she incubating or did I happen to look at the time of deposition?

California Quail

July 29. Strawberry Canyon, Alameda County.

1210 No birds in sight when I arrived at the Behavior Lab. pen. 1240 Quail have all remained hidden except for a ♂ glimpsed 3 times in the South corner. 1242 Checked nest in A-5; ♀ on 11 eggs still, indicates definitely incubating, probably began yesterday - projected hatching date Aug. 19.

1902 A3♂ ran rapidly across the pen to E-8, unaccompanied, as assembly calls heard from other birds. 1923 ♂ with 5 or more half-grown young moved across lower edge of pen to E-10 and up NE fence. 1930 Green ♂ and 8 half-grown chicks (34 days) foraging in center clearing; ♂ flew to top of instrument shelter as chicks retreated to edge of weed patch. 1944 Green ♂ flew down to join chicks in E-5 and E-6 weed patch. 1953 A number of birds are running around in the east corner, at least 2 ♂♂, 1 ♀, and several chicks. 2004 The two 6-week immatures came from B-9 to central clearing, and a ♂ perched on top of B-7 eucalyptus. The two chicks then ran to the eucalyptus and clambered through the branches to perches near the top. At 2010 The three flew down to B-9. 2014 Green family in E-9.

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July 29. Strawberry Canyon, Alameda County.

2020 Red ♂ came from E-8 to feed in central clearing. After going to top of the two instrument shelters in succession, at 2025 he flew into the E-9 roost. 2027, O3 ♂ ran from D-1 to dust in the dust bath, and at 2032 flew into D-4 roost. I checked and found ♀ on the nest in A-5, left at 2035.

July 31. Strawberry Canyon, Alameda County.

1015 ♀ on nest in A-5. ♂ and 2 immatures flew from this area to A-10. 1050 ♂ and several (>4) chicks in A-10, another ♂ in "guard" pose in D-9. 1103 ♂ in A-10 (still) ident. as Green. 1108 Green ♂ perched on B-7 eucalyptus as his brood fed nearby. 1112 Brood of 8 chicks (5 [redacted] weeks old) drank at water hole and fed in center clearing. These appear to ~~have~~ juvenile plumage complete, adult body shape, well developed retrices, and length about 3/4 that of an adult. 115 Three of these chicks were feeding in one spot, jostling and shouldering each other, and two stood erect and pecked at each other 3 or 4 times, without, however, any of the jumping up ~~...~~ of a typical cock fight.

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July 31. Strawberry Canyon, Alameda County.

1125 ϕ3 ♂ crossed from E-8 to water hole (alone), drank, and went at once under B-7 eucalyptus. Green brood is no longer in sight, Green ♂ still on the same perch. 1128 Green ♂ flew to ground and ran into weeds in B-9, followed by brood of chicks, then by another (ϕ3?) ♂. 1130 Ceased observations from hut and entered the pen. No nests were found, 3 ♂♂, 2 ♀♀, and the brood of 8 chicks were flushed in A-10, the other ♀ still on the nest in A-5. This accounts for all birds except Orange ♂ with 2 six-week chicks, and ? indicates certainly that no other hens are incubating, probably none laying, and second pair bonds are weak or dissolved.

Aug. 2. Strawberry Canyon, Alameda County.

0610 On arrival at Behavior hut pen saw several quail in the open - identified Green ♂ with several 5½-week chicks, and Red ♂, who walked over very close to nest site in A-5, then down the fence line. An outside ♂ on top of the pen in B-4.

California Quail

Aug. 2. Strawberry Canyon, Alameda County.

0640 a pair foraging in A-10, the ♂ spending most time standing erect in guard position, the Green brood huddled together on the ground nearby, with Green ♂ walking about in the vicinity. No interaction, although birds were in sight of each other, sometimes as close as 4 feet. 0651 Orange ♂ perched on large instrument shelter give chipping calls. 0654 Another ♂ perched on B-7 eucalyptus, also calling, as a house cat walked along outside the pen fence. The Green brood are no longer in the same spot where previously huddled, having apparently taken cover in response to the ♂'s warning notes. 0659 Red ♂ walked into center from C-7, as a ♀ and the Green brood crossed into weeds nearby. 1900 The ♂ (presumed Green) on B-7 eucalyptus flew down to ground & ~~fed~~ fed close to Red, sometimes almost touching, without any interaction, as the 8 5½-week chicks left the weeds and also fed; then the whole group moved off to the east corner, as did the ♀ who

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Aug. 2. Strawberry Canyon, Alameda County.

emerged from the weeds into D-8
0705 One 7-week immature has joined Orange ♂ on top of the instrument shelter, a second on the ground below. The former young bird has a small streak of black below his eye, but sex is not obvious even at this age. The pinkness of the young bird's legs is in marked contrast to the dark-gray of the adult.
0715 Young bird flew down to ground from the shelter perch, Orange ♂ still there.
0718 As the Green brood moved across D-8, Green ♂ approached the two immatures, whereupon Orange ♂ flew down from his perch and made a very short chase — not much more than a threat followed by a short retreat by Green. 0722 Green + brood feeding in center of pen, joined by ϕ3 ♂, and Green male flew up to perch on B-7 eucalyptus. ϕ3 ♂ made a peck at one chick feeding too close to him, but no other interactions occurred. A pair visible for some time in E-9 are Red ♂ (certainly) and Yellow ♀ (probably). ϕ5 ~~♂~~ ♀ has not been seen today or for some days past.

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Aug. 2, Strawberry Canyon, Alameda County.
0726. Latter pair came into center & were identified as Red & Yellow. All four ♂♂, both broods (2 and 8) and Yellow ♀ in the open at once for a moment; Black ♀ presumably on the nest, and Ø3 ♀ unaccounted for. 0743 Red-Yellow pair again came into center to feed, with Green and Orange still on same perches. 0746 Entered pen to check nest - ♀ incubating in A-5.

Aug. 5. Strawberry Canyon, Alameda Co.
1200 Hen on nest in A-5. In servicing instruments, noted several feathers on the ground, including 3 remiges; indicates some birds are molting.

Aug. 7. Strawberry Canyon, Alameda County.
0630 at Behavior Lab pen. Weather clear, station just above thick ST layer covering bay and hills. Very light wind, visibility unrestricted, no sunshine yet visible. Both broods and 2 adults seen as I approached the pen. 0638 Heard a single "cow!" call. 0643 A ♂ walking on top of the pen over and near the observation hut.

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Aug. 7. Strawberry Canyon, Alameda Co.

0644 Ø3♂ perched on instrument shelter for a moment. 0645 Green ♂ with 8 chicks (now six weeks old) feeding in A-2 and close to the hut, then moved down the fence line into A-6. All the chicks were giving "cheeps" as they fed. 0650 Another set of 2 "cow!" calls from the ♂ on top of the pen. 0654 A ♂ with a brood of about a dozen 6-week young foraging on the bank in back of the pen (outside); may also have been a ♀ present. 0659 ♂ (Green?) flew to perch in B-7 eucalyptus, as brood of chicks foraged in A-9. 0703 An immature quail on top of the pen over B-4 - probably one of the brood noted at 0654. 0708 One immature ~~ran over~~ drank at water hole, then ran under B-7 eucalyptus. Several assembly calls outside the pen. 0713 Green ♂ flew down from B-7 perch and ran into weeds with his brood. 0716 Ø3 ♂ ran past water hole into central clearing and began feeding, unaccompanied, then ran into cover in E-5 at 0718. 0740 After 22 minutes with no quail in sight, noted several immatures feeding in A-10.

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Aug. 7. Strawberry Canyon, Alameda County.
0753. Still no more activity than an occasional glimpse of ♂ and young in A-10. Hen incubating nest in A-5.

Aug. 9. Strawberry Canyon, Alameda County.
0920. Hen incubating nest in A-5. The modified Bailey trap had a dead junco and a dead half-grown quail in the mesh part - the last record of setting this was July 31, and it was sprung before I left the station; apparently the birds remained quiet when the trap was sprung (I did not see this occur), and I assumed a junco had sprung it and escaped through the trap door edge as has frequently happened. Since 8 chicks were seen with Green only 2 days ago, this must be one of the 2 Orange chicks. No!
0945. Heard a loud assembly call outside of the pen. I note that both broods of 2 & 8 were seen Aug. 2 - the dead one might be the third (Smaller) Orange chick, or one that squeezed into the closed trap & became entangled.
0955 Two ♂♂ and some chicks noted in the south corner, and another pair in E-10. 1020 Same group still foraging in the south corner - no

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Aug. 9. Strawberry Canyon, Alameda County.

count possible because of weedy cover. The two ♂♂ were observed to be feeding close together - once shoulder to shoulder, - without showing antagonism. 1040 All birds have remained hidden in the weeds the last 20 minutes except one ♂ seen in south corner. The adult males today have been feeding along with the young birds with intervals of standing erect in the guard position, but none have taken a high perch & acted as guardian for extended periods as has been noted in previous weeks.

Aug. 10. Strawberry Canyon, Alameda Co.

1920 A number of birds running along the SE fence in E-10, including at least 1 adult ♂ and half a dozen or so immatures. 1930 Red ♂, Green ♂, and 3 immatures feeding in center clearing, then to dust bath with three other immatures in E-3. 1932 Total of 7 immatures at dust bath, the two ♂♂ retreated to cover in E-4. 1934 Orange ♂ with two immatures at the edge of weeds in E-6; both the young (now 8 weeks old) show dark ♂ markings around the throat

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Aug. 10. Strawberry Canyon, Alameda Co.

1939 A cock chased another from E-9 across clearing into E-5. 1941 Ø3 ♂ to dust bath after chasing another ♂ near instrument shelter; this ♂ was probably the one chased from E-9 at 1939. Green brood feeding at edge of weeds in D-5. 1948 Orange ♂ in dust bath, chased one of the Green chicks away; an Orange immature also dusting, the other feeding in D-3. 1954. Ø3 ♂ came near dust bath and was chased about 15 feet by Orange ♂; he then chased two of the Green chicks in D-6, 1955. Orange ♂ chased a group of Green chicks, then chased Green ♂ into the weeds.

1957 Ø3 ♂ to dust bath. 2003 Red ♂ and Yellow ♀ feeding in center near Green brood with no interaction, then the pair dusted in the dust bath. 2004 Red-Yellow pair returned to E-8, followed closely by 4 Green chicks. 2005 Ø3 ♂ to water to drink, then to dust bath again. 2008 Ø3, after perching on the small instru-

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Aug. 10, Strawberry Canyon, Alameda Co.,
ment shelter for two minutes, flew to the ground and walked under the D-4 eucalyptus roost. Green brood and ♂ feeding in D-3; one immature flew into D-4 roost, the rest of the family chased into E-2 by Φ3 ♂. 2014 Four or more Green chicks flew into D-4 roost. 2018 Immatures flew to ground again, feeding in D-4, with Orange, Green, and Φ3 ♂♂ in sight, and one Orange immature. 2020 Noted movement in E-9 roost, & a ♂ flew into D-4 roost. 2023. Hen on nest in A-5, ended observations.

Aug. 11. Strawberry Canyon, Alameda County.
1730 Three birds flew from West to South corner as I approached the Behavior Lab. pen. An adult ♂ and ♀ noted in A-10 shortly after. Several assembly and one squill call heard nearby. 1739 Saw Φ3 ♂ with a downy chick in A-8. 1743 Red and Orange ♂♂, a ♀, and some immature chicks in A-10 - a ♂ chased a couple of the chicks. 1746 Φ3 ♂ in same spot, with the chick trying to keep under him - he then moved to central

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Aug. 11, Strawberry Canyon, Alameda County. clearing, past water-hole; only one chick with him - very small. I suspect a brood has hatched today and only this one is following the ♂, the others with the ♀, perhaps still in the nest. 1750 Ø3 ♂ and chick went into weeds by the nearest post in area D-8. 1800 Ø3 ♂ again came into clearing, this time without the chick, then ran down into weeds in C-8. He appeared to have only one head plume, with a short quill beside it. 1802. A ♂ in A-10 with about 6-7 chicks must be Green. 1803 A male perched on the top of the pen over A-6. 1808 Two ♂♂, one ♀, and 6-7 immatures along fence in A-6 - they came very close to the nest site in A-5, with no response being made. The pair (Red-Yellow?) moved off, leaving (Green?) ♂ and chicks feeding together. 1812. Yellow ♀ walked up almost to nest site, then into A-4; (Orange?) ♂ with two immatures ♂♂ in B-8. 1813 Orange and Ø3 ♂♂ to central clearing, the latter following Orange rapidly - perhaps "chasing", but with the normal aggressiveness.

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California Quail.

Aug. 11, Strawberry Canyon, Alameda Co.

1824. Orange + 2 young feeding in A-4 as Red ♂ walked to nest site, then resumed feeding nearby. 1819 a group of 2 ♂♂ and 4 immatures of about 6 weeks perched on top of pen above A-5 where Green ♂+ chicks, Orange ♂ + chicks, and Red-Yellow pair were feeding. I saw two others "climb" the pen by starting at the bottom, flutter their wings while clawing at the fence at the same time. There were finally 8 young birds with a ♂ and a banded ♀, the other ♂ having moved off. 1825 Red-Yellow and Green family with definitely 7 chicks feeding industriously in A-5. Orange + chicks recently in this same area. 1828. Green ♂ chased an immature ♂ - probably one of his own, since the throat + head markings appeared less distinct than noted on the two Orange young yesterday. 1830 As I entered the pen, the family over A-5 flew into woods, and another large group of at least 20 quail flew from the north corner of the pen down the hill

California Quail.

Aug. 11. Strawberry Canyon, Alameda Co.
into the eucalyptus. The hen was still on the nest in A-5, no sign of hen, nest, or chicks in D-8 where the new chick was last seen.

Aug. 12. Monday. Strawberry Canyon, Alameda County, Calif. 0900 Hen incubating nest in A-5. 0934 Counted a ♂ with 5 immatures (Green?) and a pair (Red-Yellow?) running along fence in B-10. 0952. A number of downy chicks at edge of weed patch in C-8, with a ♀. There appear to be 6 to 8 chicks, no accurate count possible until they come into a clear space. 1001 A ♀ in ~~A~~ E-10 chased the two 8-week Orange Chicks. 1008. Good count of 7 immatures with a ♂ (Green?) in A-9. Persistent assembly calls outside of the pen. 1020 ϕ3 ♂ with about 6 chicks drank at water hole, then moved into B-6, while ♀ and about 2 more chicks remained near water hole in C-7. 1024 This ♀, ident. as ϕ5, came to water with 3 chicks (total of 9 in the brood); these much less active than those with the ♂. One chick stumbled approaching the water hole, then sat motionless

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Aug. 12. Strawberry Canyon, Alameda County.

for a full minute before moving on. 1027 (Recount of 9 or possibly 10 chicks as this family (I will call them "Silver") crossed back to weeds in C-8. 1038. One Silver chick, while the other remained in weed cover with ♀, wandered into C-5, this side of the water hole, while Φ3 ♂ took guard posture on a rock by the water hole. 1041. This chick now into area B-5. 1044. Chick returned near water-hole, & both moved off in direction of the rest of the family. 1052 Silver family feeding in vicinity of water hole, then retreated under B-7 eucalyptus. 1100. Black (by elimination) ♀ still on nest in A-5.

Aug. 13. Strawberry Canyon, Alameda Co.

1544. Heard assembly calls outside the pen at the Behavior Lab. 1548 A ♂ and downy chicks in A-9. This male has two distinct plumes. 1554 as a ♀ approached from A-6, both chicks and ♂ moved toward her, then followed her into B-10. 1556 A ♂ and two immatures (Green brood by size) seen along fence in B-10. Pair with downy chicks crossed C-10 into D-10.

California Quail

Aug. 13. Strawberry Canyon, Alameda County.

1609. Silver family took shelter under E-9 eucalyptus after feeding in its vicinity for several minutes. 1618. A number of birds including 2 ♂♂, one ♀, and several immatures moving about in A-10; one short chase noted. ♀ with downy chicks into D-8 weed patch. 1621 ϕ3 ♂ in C-8, with chicks nearby; again noted appearance of one plume, with a quill sprouting next to it. 1623 Incomplete count of 6 chicks as Silver family moved along edge of weeds in D-6. Very loud assembly calls heard nearby outside the pen. 1632. Good count of 7 chicks as silver family, with ♂ and ♀, moved up across E-3, then down again. 1637 Green ♂ with 7 immatures in A-6, feeding. Joined by Red-Yellow pair briefly, not antagonistic. 1639 One immature Orange ♂ noted in A-10, an adult ♂ in B-10, prob. Orange. 1640 a "Cow!" call from ~~out~~ outside pen. 1643 Red ♂ pecked at two Green chicks as they fed close together. 1648. Silver brood came to drink; ϕ5 ♀ chased three immatures very aggressively for 15 feet. 1640 ♀ still on nest in A-5.

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Aug 14. Strawberry Canyon, Alameda County.

1235. Hen on nest in A-5 in Behavior Lab. pen. 1327. A pair along fence in A-10, and Silver family in B-10. 1335 Silver family in A-10 - ♂ chased the other ♂ (Red?) in this area. 1336. Adult ♂ (Orange) crossed B-7, followed by two immature ♂♂; adult then flew to perch on B-7 eucalyptus while young ran under it. ♂ flew down ~~a~~ after 4 minutes, then ran across to A-9 followed by one immature.

1910 Orange ♂ and two immatures in E-9; another ♂ in this area, a chase occurred. 1915 Green ♂ and 6 immatures in E-1, moved down NE fence line. 1930 Green ♂ and two young in center clearing. 1943 Seven Green immatures to dust bath and feeding in center, chased twice by Ø3 ♂; Green ♂ on instrument shelter flew down and joined young. 1946 Green ♂ and 5 young to dust bath and water; young were again chased by Ø3 ♂. Orange and 2 older chicks still in back of E-9 eucalyptus. 1950 Ø3 ♂ crossed back from B-8 to E-6. Evidently the ♀ is already brooding the young chicks for the night. 1954. Two short chases in E-9.

California Quail

Aug. 14. Strawberry Canyon, Alameda Co.

1958. Orange ♂ and his two young to center clearing, Red ♂ to dust bath with Yellow ♀ and Green immatures feeding in E-8. 2000. Yellow ♀ in dust bath with Red ♂, no reaction from nearby Orange family. 2003 Orange ♂ moved over to join ♀ of Green young and fed with them with no aggressive actions on either side. 2014. Birds commencing to go into roost. Hen on nest in A-5.

Aug. 15 Strawberry Canyon, Alameda Co.

0940. As I approached the Behavior Lab. pen, several birds flew from A-5 and A-6 to the South corner. A family of 1 ♂ and 10 immatures flew to the top of the pen outside, and walked along the SE fence line. Several assembly calls heard.

0945 A quail flew across the pen showing the fork-tailed appearance due to molt of central retrices — seemed to be an immature.

0950 Black ♀ came from cover in the north part of the pen, and took several drinks at the water hole. I entered the pen to check the nest in A-5, and found it as before with 11 eggs.

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Aug. 15. Strawberry Canyon, Alameda Co.

This is the first time I have found her off the nest since she began incubating July 28. 0958. Black ♀ feeding briefly in A-8 then ran up pen and almost directly to nest in A-5. The inattentive period totalled 18 minutes after I arrived at the pen, plus time off the nest before my arrival. 1003 ♀ with 6-7 downy chicks at edge of weeds in D-6. 1008 a number of adult and immature quail in E-10, with the family outside perched on top of the pen just above. 1014 The quail family outside flew down from the top of the pen to the edge of the eucalyptus grove downhill to the SE. 1018 Two downy chicks feeding near instrument shelters, no adults in sight; went under D-4 eucalyptus. 1030. No further activity, the quail appear to have taken to their mid-day loafing cover.

Aug. 16. Strawberry Canyon, Alameda County.

0925 about 8 birds, adults and immature, along fence in A-10 when I entered the observation hut. Family of about 10 immatures perched above this area on the outside edge of the pen. 0933 Silver family in edge of weed patch D-8 - no count of chicks.

California Quail

Aug. 16, Strawberry Canyon, Alameda County.

0940. Silver family to water, good count of 6 chicks; then foraged across B-5. At this time heard an exchange of calls of 2 or more birds near, or perhaps one inside, the pen - these were in the pattern of the "assembly", but the quality of the sound approached the aggressive "squill". 0953. After foraging in B-4 for last 10 minutes, Silver pair with 5 chicks ran down behind B-7 eucalyptus, the 6th chick continuing to feed by himself in B-4 and B-5. 0955. The Silver adult pair ran rapidly back to B-4, and ran about the area, looking and calling - every indication they were looking for the extra chick, which was not in sight at this time. ♂ Ø3 then flew to a perch on B-7 eucalyptus while the ♀ Ø5 joined the other chicks in C-7. 1001 Ø3 ♂ flew to ground with his family - no sign of the other chick joining them. There is continued activity of large birds along the fence in A-10 and B-10, with a ♀ and 2 adult ♂♂ seen. These must be at least Green family and Red-Yellow pair - Orange and his two are probably also here, although

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Aug. 16. Strawberry Canyon, Alameda County, not identified as such. 1005. Searched unsuccessfully in B-4 and B-5 for signs of the chick in difficulty. Hen on nest in A-5.

Aug. 17. Strawberry Canyon, Alameda County. Observations beginning at about 1500, no watch to time events. All groups of birds visible at least in part - mostly in southern quarter of the pen. Silver family with about 5 chicks seen from B-4 under B-7 eucalyptus, and shortly afterwards a single chick was seen in A-4. Three ♂♂, one ♀, 6 green imm. all close together in A-5, with one downy Silver chick nearby. The downy chick went over to the vicinity of the nest in A-5, and the adult ♀ could be seen moving apparently a little off the nest. Orange and two imm. ♂♂ separated from the larger group. I can only be sure of 6 Green immatures. Checked nest in A-5 and found ♀ brooding newly hatched young, ten empty shells, and one egg not hatched, as I saw when both ♀ and chicks ran off as I approached closely.

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Aug. 18. Strawberry Canyon, Alameda Co.

0850 Both broods of large young feeding in the south corner of the Behavior hab pen, ran to cover when I entered the pen at 0900 to give water & grain. 0920 Green ♂ perched on B-7 eucalyptus as 3 of his brood drank at the water hole. 0930. Ø5 ♀ came out of weeds in E-6, followed by ♂. Young Green ♂ flew up to B-7 eucalyptus and perched alongside of adult for a moment; Orange immatures in E-9. 0933 Two Green immatures drank at the water hole. 0945 3-4 Silver chicks feeding in D-6 near edge of weed patch. Family crossed to weeds in D-8 - counted only 4, one of which was noticeably smaller. 0944. Black ♀ and her new chicks came out of weeds in D-6. Counted 11 chicks - apparently there is some mixing of the two new broods. As this brood followed the Silver family across D-8, Orange ♂ perched on the instrument shelter and ~~as~~ 2 Orange immatures fed nearby. 0957 Two Orange immatures drank at the water hole. Orange ♂ flew from perch and ran down to C-8. 1004. One downy chick drank at water hole as Ø3 ♂ perched at

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Aug. 18. Strawberry Canyon, Alameda County.

its edge. 1006. Second chick drank, another feeding in clearing with φ5 ♀, as Black ♀ emerged with chicks from C-8 towards water hole. 1008 Orange ♂ feeding with ~~φ5 ♀ and~~ Black ♀ and about 10 chicks then all drank at water hole - count of 11 chicks.

Aug. 19. Strawberry Canyon, Alameda County.

0858 Pair with downy young (only 4 counted) around the base of E-9 eucalyptus. 0911 This group still feeding in sunny patch in back of the eucalyptus. 0920 Black ♀ with about 10 chicks came from E-9 to feed in D-6, followed by φ5 ♀ with only 1 chick. φ5 ♀ then ran up to D-4 and joined 3 other chicks - about 1 week size. Black ♀ to water with 11 chicks; φ5 ♀ approached with 3 chicks together, a fourth may be additional or one already counted. 0925 φ5 ♀ and 3 chicks ran under D-4 eucalyptus, φ3 ♂ perched on the instrument shelter. 0929 ~~Silver~~ Black ♀ ~~♀~~ and chicks foraging in B-5, φ5 ♀ and 3 chicks feeding slowly across the clearing, ♀ dusted briefly 0932. Silver family incl. ♂ and a 4th chick drank at water hole, and ♀ chased

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Aug. 19. Strawberry Canyon, Alameda Co.
one of the Orange immatures. 0927. Ø3 ♂ chased both Orange immatures from B-8 near his chicks. One Orange imm. drank at the water hole.

Aug. 20. Strawberry Canyon, Alameda County.
1503. ♀ with brood of downy chicks (larger Black brood) in B-9. 1510 ♂ and ♀ with chicks in B-10 (Silver family?) and (Green?) ♂ with 3 immatures in E-10. 1531 (Silver?) pair with 3 chicks ran along fence in B-10. 1533 at least 4 Green immatures crouched at the base of E-9 eucalyptus (in sunshine), another joined them, and 2 or more other birds including an adult ♂ in back of bush. 1549 Black ♀ with chicks and Ø5 ♀ with chicks fed in center near waterhole and a few chicks drank. I could count only 13 definitely of the rather widely scattered chicks with two broods mixed. The primary quills are evident on the older chicks, the younger are still entirely downy. Ø5 ♀ with 4 chicks left first to go under B-7 eucalyptus. The other brood crossed B-5 and B-6, then to A-5 where I got a good count of 10 chicks as they all moved down toward the South corner.

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Aug. 20. Strawberry Canyon, Alameda County.

1611 Numerous chips + clucks heard from in back of D-4 eucalyptus, and several assembly calls outside the pen. 1622. Pair with downy chicks in B-9, then Black ♀ with chicks came to C-7, then to water hole with 10 or 11 chicks, one obviously the older (Silver) brood. Green ♂ to clearing with 7 immatures, 4 ♂♂ and 2 ♀♀ with one doubtful, probably ♂. 1625 A squill call and several assembly calls outside. 1626 12 chicks with Black ♀, only 2 appeared to be from Silver brood; several chicks, including some of Black's, ran over to Silver pair as they approached the water hole. 1630 Silver pair to C-10, followed by 4 chicks of own brood. Black ♀ to D-7 weeds with apparently all of her own chicks (10 by previous counts). 1633. Many clucks heard in North corner; saw a large family group in thistles just outside the pen, with a ♂ inside in E-2. Three separate exchanges of sharp squill notes. Red ♂ left this area, another ♂ still there and a (prob.) ♀ in the corner of the pen. 1639. I entered the pen

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Aug. 20. Strawberry Canyon, Alameda County.

and approached the North corner, and the ♂ there at once flew down to the east corner, while the birds outside all ran down along the fence through the thistles. The group must have exceeded 20 birds - apparently the same combined families seen a few days ago perched on the pen. The ♀ in the corner did not flush until I came within 10 feet - she is Yellow by elimination - perhaps is attempting to lay, at this date? No sign of even preliminary nesting attempts where she was resting. The ♂ was probably Orange, since Red was seen to leave, Ø3 is with his chicks in B-9; ~~Black~~ Green was recently with his brood in E-3, and it might have been he.

Aug. 22. Strawberry Canyon, Alameda Co.

0848. No birds in sight in Behavior Lab pen on arrival - damp, cool, and windy conditions. 1002. All quail have remained completely hidden in cover in last 30 minutes of observation without disturbance.

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Aug. 22. Strawberry Canyon, Alameda Co.

1415 Black ♀ with downy chicks - count of 10 including two following a ♂ in area A-4, foraged down to South corner. Eight birds in a group, including 2 adult ♂♂ 1 adult ♀, and immatures of both sizes, in A-10 and B-10, and a third ♂ near Black ♀ and chicks. 1424 One ♂ chased another back and forth in A-10 for a total distance of 40 feet. 1427 Black ♀ and 8 chicks of youngest brood drank at the water hole. 1431 Black ♀ dusted 3 of the chicks followed her to dust bath but only pecked at the dirt - either for grit ~~&~~ or food items mixed in the dust. 1434 03♂ to water hole with 4 chicks of his brood - these are readily separable from the younger brood by the development of wing feathers which is quite advanced. A ♀ with chicks was glimpsed in weeds in C-8 - do not believe this was Black, since at 1439 she was again noted foraging with chicks in D-3. 1442 Another pair in A-4 was joined by 6 immature birds - probably all Green brood. 1444 ♂ in A-4 identified as Green, moved to A-8 with 3 imm ♂♂, then

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Aug. 22. Strawberry Canyon, Alameda County.

4 more immatures, at least one of them ♂, flew over this group to weeds in B-9. ♀ not seen at this point - may have been mistaken identity. Then another ♂ joined Green in A-8, 1448. φ3 ♂ perched on weeds in D-6 as ♀ with chicks went behind the weeds in E-7; Black ♀ with brood now in D-2. 1512 Silver pair with chicks in E-10. Two ♂♂ and a ♀ in South corner A-10. Two ♀ together with chicks in E-9 - 1519 The two broods and two ♀♀ came out into the clearing as φ3 ♂ perched on instrument shelter. Count of chicks 4 and 8 as before. 1523 Black ♀ dusted, then pick up a dried pea (from Pigeon Grain mix) and dropped it again.

Aug. 23. Strawberry Canyon, Alameda County.

1017. 5 or 6 quail including 2 adult ♂♂ and several immatures running along fence in B-10, while φ3 ♂ with chicks foraging in E-8. Group in B-10 probably Green family and Red-Yellow pair. All the birds along the lower part of the pen are spending most of the

California Quail

August 23. Strawberry Canyon, Alameda Co.

time patrolling along the fence, as if looking for a way out; this might be a manifestation of the urge to come together into coveys – especially since it seems to including all the birds in the pen except the ones with young chicks. 1034 Black ♀ with about 8 chicks came from D-8, foraged into C-7, then back into D-8 weed patch; two of these were the older Silver chicks, the other all appeared to be downy. 1039 Orange ♂ came to water-hole with two (♂) immatures, and flew to a perch on the B-7 eucalyptus as the young drank and then ran under the eucalyptus. 1042 Orange ♂ flew down to weed patch in C-7, followed by 2 immatures. 1051 ø3 ♂ crossed from E-7 to water hole area where Black ♀ just appeared with her brood of chicks; he pecked at two of the downy chicks, but paid no attention to an older chick very close to him – the latter is his own brood. 1054 Red ♂ appeared momentarily in E-7. The other adults and immatures are no longer in sight, having moved to the NE fence, behind the weed patch

California Quail

Aug. 23. Strawberry Canyon, Alameda County.

1106 Took immature in trap, gross weight ~~242~~ 232 gms, tare 113, net. 119 gms. This was a young ♂ with definite black spot beneath the eye and a white line over the eye. Banded # 56614 and released.

Aug. 24. Strawberry Canyon, Alameda Co.

0855. Took immature in trap outside Behavior Lab pen. Gross weight 303 gm; tare 152 gm, net 151 gm. No male markings. Banded # 56615 and released. Heard several assembly calls soon after release, in the area where a covey of over 20 birds, mostly immature, were seen outside the pen when I was coming to the hut. A ♂ with 3 immatures in A-9 responded to the calls by running back & forth along the fence, and stopping to look out frequently - several other immatures joined this group, obviously the Green family. 0911 A ♂ in guard position in D-8, a ♀ with chicks foraging in D-9. 0919. Group alongside SW fence now 2 adult ♂, 9 imm ♂ and 2 imm. ♀ of Green brood.

0924. Now 6 immatures - noted chest-

California Quail.

Aug. 24. Strawberry Canyon, Alameda County, Calif.

nut belly patch developing on one. A ♀ foraging in A-10. 0928 A 7th immature crouched in grass in A-10. 0929 Silver family (pair and 4 chicks) moved along fence from E-10 to C-10. 0933 Orange ♂ and one of his young, and Red ♂ started feeding in same area as Green brood (A7 to A9). Birds glimpsed in B-10 probably yellow ♀ and the other Orange immature. 0935 Persistent assembly calls outside the pen - a ♀ walked across the top of the pen, and a number of birds could be seen just outside the SW fence, nearest the birds feeding inside. Again today all the birds except small young and their parents are loosely grouped. 0942 A ♀ with downy chicks glimpsed crossing C-9, only 2 chicks seen for sure. 0951 Silver family crossed back to E-7. 1005 Black ♀ with 6 chicks (all 1-week old) crossed from C-7 to E-6, feeding in the clearing. This is the same number of young chicks with her yesterday.

California Quail

Aug. 26. Strawberry Canyon, Alameda Co.

0940. ♀ Black with 3 or 4 downy chicks in A-4 and B-4, and Ø3♂ with 4 2-weeks chicks and 2 downy chicks, which ran down and joined Black ♀. About 7 adult or nearly grown birds along the SE fence line. 0945 ♀ with one downy chick ran down fence line from A-3 toward S corner

Aug. 26. Carmel Valley Monterey County, Calif.

1630 about 6 miles above Carmel Valley Postoffice, came upon a covey along the roadside of something over 20 quail all nearly or quite full grown and mostly adult plumage. One immature ♂ was noted with black throat marking still lacking.

1800 at Hastings Reservation. Saw a group of 4 moving through the brush above the Bell house, including a nearly grown ♂, and a group of 8 feeding near the road in front of the White house, all appearing full-grown. The group from the brush began spreading out into cut grass stubble, and I counted 16 at 1806 - all nearly or quite full-grown.

California Quail.

Aug. 26. Hastings Reservation, Monterey County.
1817. The covey of 8 gradually moved toward the larger covey and the groups mingled. I could identify certainly only 2 adult ♂♂ out of the 8, and only one adult ♂ in the covey of 16. Most of the others appeared to be immature.
Another count gave 17 and 8, the two groups slightly separated.
Another bunch were heard in the brush on the hillside below the instrument shelters.

Aug. 27. Hastings Reservation, Monterey Co.
0800 to 0930 observations at the pumps where ground water was available from seepage revealed neither sight nor sound of any quail.

Aug. 27. Hunter Liggett Military Reservation
Monterey County. 1810 Flushed an adult ♂ and 10 3/4 grown young along the roadside; another group of birds calling in the brush nearby. 1915. 14 quail moved up the hillside near water point #1, 10 ♂♂, 2 ♀♀, and 2 not determined - all full grown, but probably one or two broods which

California Quail

Aug. 27. H.L.M.R., Monterey County, Calif.

have completed their post-juvenal molt. Six other quail, apparently full grown, were noted in and under an oak tree on the same hillside. 1940. On a second stop at the same water point, I flushed a ♂, a (probable) ♀, and 8 young no more than half-grown, about 6 weeks. No more quail seen in the trip totalling 8.7 miles of back roads over two hours.

Aug. 28. HLMR, Monterey County. 0725 to

0755 Many birds scattered around the water point (#1). An adult ♂ and 11 immatures nearly grown on log over the spring; 30 ± birds flew from spring area; birds flushed in small groups all over the hillside as I walked around the spring including one group of 5 only half-grown, another of 4 3/4 grown, most of the others full grown or nearly so. Following noted in road census covering 7.3 road miles:

0815 - 4 immatures.
13 immatures.
5 birds including 1 ♂.
0825 - 2 ♀ 1 ♂ and 14 half-grown.

California Quail

Aug. 28. H.L.M.R., Monterey County.

0835 - 1 ad. ♂.

0845 - 17 immatures (some adults included) near road, and a covey of about 30 up the hill about 100 yards.

0850 - 1 ad ♂ - sentinel position. 1 ♀ plus 9 young flew into the gully.

0855 - 1 ad. ♂ (0850) flushed with about 30, mostly immatures, into oak trees.

0900 - 25 full-grown or nearly so.

0925 - 2 birds near guzzler #3.

Summary of quail seen in this morning observation:

149 birds, largely immatures, in 6 coveys of 17 to 30 each.

2 lone adult ♂♂.

53 birds in family (or combined 2-family) groups, only 6 of these identified as adults. Of the young, 19 were classed as 1/2 grown (late July hatch), 4 as 3/4 grown, and 23 too large to ~~classify~~ clearly separate from adults by size.

The birds in coveys were not separable by eye into age classes in the numbers encountered.

California Quail

Aug. 28. McMillan Ranch, San Luis Obispo Co.

1630. Began observations at the blind at Marian Spring.
1640 ♂ + 8 imm. nearly grown crossed hillside, followed by ad. pair + 2 imm. As this group came to water-hole, the young appeared about 3/4 grown, 2 ♂♂ showing half-developed throat markings, most of the other birds smaller, may have been a younger brood. 1648 all young left with one ♂, the pair followed as one more ♂ came to drink!
1651 Ad. ♂ + 1 imm. ♀, nearly adult plumage.
1652 Quail scattered as cattle came to drink.
1730 Cattle finally left the spring area.
1737 More cattle to water-trough, ended observations.

Totals this afternoon:

3 ad. ♂♂
1 ad. ♀
11 immatures, 3/4 grown (2 ages).

Observations by Geiger at the ranch house water-hole: (1640 - 1740).

8 ad ♂♂, with
40 imm., and
40 unaccompanied immatures.

(Some ♀♀ may have been overlooked as large immatures). 8 of the immatures were only 1/2 grown - late

California Quail

Aug. 28. McMillan Ranch, San Luis Obispo Co.

July or even early August hatch. Of the few immatures identifiable as to sex 11 ♂♂ and 9 ♀♀ were noted.

Aug. 29. McMillan Ranch, San Luis Obispo Co.

0753 Took station in blind at Marron Spring for observations of quail watering: on the way to the blind noted a large covey near the gate in the pasture fence - about 25-30 birds under the trees, and another bunch estimated at 100 over the crest of the hill. 0800 Single adult ♀ to drink - along with young meadowlarks, many towhees, finches and mourning doves. 0809. 29 birds from hill to left; large groups all up the hill along this path; 25 birds from hill directly opposite. Large coveys are in subcoveys of about 30 birds each, and there are at least 4 such sub-coveys, perhaps 5, at the spring now. These birds are all essentially full grown, many with adult plumage not quite complete, others of this years crop in complete adult plumage - no birds noted less than two months old.

California Quail

Aug. 29. McMillan Ranch, San Luis Obispo Co.

0817. Another string of birds coming down the path, after some had moved out - I estimate this is 7 bunches averaging 30 each, altogether so far. Probably 200 birds in sight at once at the spring and over the facing hillside. Continual chucking, low assembly calls, and occasional loud assembly and squill calls. 0835. Counted 130 quail young to watering trough, before they scattered, with at least half as many or more (70-100 birds) still over the hillside. The birds scattered somewhat as a young coyote appeared on the hill down canyon and then came and drank just across the fence. The quail did not fly away, and even returned to the water within 10-15 feet of the drinking coyote; the latter made no attempt to molest the quail in anyway but returned over the hill after drinking. 0948. Another count of 104 birds to water, then scattered. 0852. 45 birds returned to water trough, then scattered as two jays flew over giving loud cries.

California Quail

Aug. 29. McMillan Ranch, San Luis Obispo Co.

0859. 49 birds counted going to water trough, scattered by a jackrabbit.
0906 Major part of this covey has retreated over the hill, with several small sub-coveys still in the area or approaching - pair of jays again scattered birds near the water trough by flying low over them and screaming.
0915 Counted 65 birds going to water trough - scattered with about 35 others which were still approaching. These 100 birds are all in addition to the larger earlier covey. Observed a short cockfight with 4 encounters involving 3 birds. 0930 Counted 183 birds to water, then a jackrabbit scattered them. Nearly half of these birds were in separate family groups, averaging about 10 to a brood, a little younger than the larger coveys, but a minimum age of 8-9 weeks. Post-juvenal molt generally incomplete in these broods. I then left the blind to check on Gumper's observation post, and on returning at 0955 flushed about 30 birds from the water hole. Left the station at 1005.

Summary of counts, allowing for about one-half repeat visits

Virginia Francis
1963

Aug 27. Hunter-Liggett Mil. Reservation

62.5 mi.

d. 6:10 A male + 10 3/4 grown - + more in brush

7:15 10 M + 2 F + 2 ?? full grown

6 full grown

7:40 M, F + 8 half grown young

71.2 mileage

Wed - Aug. 28 - a.m.

84.6 mileage

d. 7:25 - 1 A.Male + 11 young 30

10 more in covey flew for tree -

8:15 - 4 im.

d. 13 im

5 one M

8:25 2 F.A. + 14 ~~im~~ halfgrown 1 M.

8:35 1 m.

8:45 17 im we chased

18 im + 1 (30 altogether)

8:50 1 M. +2

1 F + 7 flew into gully

8:55 Flushed 30 + cock guarding

9:00 - 25 nearly full grown -

d. 9:25 - 2 at guzzler

91.9 closing mileage

Thurs. Aug. 29 - below Marian Spring

8:10 - coyote ?

- 25 [illegible] to [illegible] on road -

8:35 5-2 feeding by me. no sound

- 3 at water

- 1 2 "

8:45 5 (4 m)

2 - (1 m)

1 -

13 -

15 -

9:35 - [illegible]

7 + 1

5 + 4

9:00

1

9.30 [illegible] + 1 im

14 im [illegible] + [illegible] + M + F parent

9 almost grown

2 " "

19 (13 males)

9:35 8 (A M + 7 im - 4 m.)

m + 9 im

2

6 im

[illegible] 7 [illegible] flew from

Wed. Aug. 28. Ranch House - p.m.

4:40 - 3 im
4:45 M + 2 -
5:00 (4 M + 5 F) im
2 m + 2 im
M + 1m
5:10 M + 10 im
4 im + 4 + 1/2 gr.
bunny 5:20 - 5 im + 3 + MA
1 m. im
im 9 (5 are males)
5:30 — 6 im
1 m + 4 im + 3
M + 10 (2 m.) (drank 3 Times
5:40 4 im

♂	♀
4	5
5	4
2	

California Quail

Aug. 29. McMillan Ranch, San Luis Obispo Co.

gives the following totals: 220 in first large covey; 215 in later groups, total 435. Summary of Ginger's observations, with no repeats: 231 birds counted — about 80 to 100 flushed as I approached, probably all previously counted. Grand total. 790 quail.

1115 to 1215 made a short collecting trip over the hillside above Marion Spring — flushed many birds, one or two family groups and single birds under separate bushes. Collected one adult ♂ and one immature ♀, then stopped because of the difficulty of separating adults from immatures — one wounded bird could not be located.

1845 to 1945 made a car trip over the immediate ranch area — a covey of about 70 feeding near pasture gate flew over the ridge toward the house; only a few birds around Marion Spring; an estimated 150-200 in three groups at the old house. Saw a single pair on the slope north of the canyon gully bounding the west pasture, and collected both — one ♀ with immature plumage,

California Quail

Aug. 29. McMillan Ranch, San Luis Obispo Co.

possibly a one-year old bird which has not yet molted. The other was an adult bird (past the 1 year-old molt) with completely ♀ plumage except for a throat pattern similar to the ♂ but without solid black throat or solid white margin - both areas flecked with spots of lighter or darker.

Aug. 30. McMillan Ranch, San Luis Obispo Co.

0810 Began observations from blind at Marion Spring, having disturbed about 150 quail when approaching, which walked up hill into the brush.

0825 Ad. pair with 1 imm 3/4 grown - 8 weeks, showing beginnings of ♂ markings.

0840 after gradually increasing calls, including squill notes, a large bunch of birds appeared on the hillside up the canyon to the left. Counted 64 as they came down the path, and drank at the water hole; all birds about full-grown, most with complete adult plumage.

0845 More birds in loose groups on opposite hillside, more or less mingled with the preceding - birds were startled before I could get a good count.

California Quail

Aug. 30. McMillan Ranch, San Luis Obispo Co.

0855 Bunch of 12 to water, only 3 of which were sub-adult in plumage. The large covey plus several (6?) of other birds have retreated over the hill, many calls still heard.

0905. An ad. ♀, after remaining on the slope giving occasional calls (often an abbreviated 2-note assembly in a low tone) went to water, and ran off as Brown Towhees flew nearby. On the third approach at 0908 she finally drank. Calls of other birds now quite distant.

0921 13 birds in 3 groups: 1 ♂ - 2 imm. ♂♂; 1 ♂ with ~~3~~ 4 nearly grown imm.; family of 5, not distinguished, apparently all immature. Young ♂♂ of 2 ages - from slight black & white lines, to nearly full black throat. An adult ♂ chased an immature

0928 3 birds: ad. ♀, imm. ♀ and ♂, over 8 weeks.

0935 4 birds: ad ♂ ♀, imm ♂ ♂, about 8 weeks. (Watch error - rewound at 0938 watch time).

0942. All quail sounds have ceased.

0951. Distant assembly calls heard. (Time correction - add 8 minutes to times after 0935.)

Ginger reports no quail at lower spring.

Fri – Lower Spring –

8:50 – windy cloudy
9:14 sun [illegible]
9:30 am
9:34 cloud covered – cool –
Doves Jays Towhees & sparrows
constantly at spring
9:45 windy – cool
quail calling for one-[illegible]
9:57 sun out – windy cold
never saw anything like it
can't even count birds –
didn't see a single [illegible].
10:00 – leave – Then out.

[illegible] blue bird – back head about
tail blue – black around eye – [illegible]
white belly [illegible] black

California Quail

Aug. 31. Strawberry Canyon, Alameda County.

1930 A number of adult or nearly grown immatures in the Behavior Lab pen: Green ♂, Orange ♂, and their broods, at least seven, possibly 8 immatures, and Silver pair without any chicks. Three different chases seen in three minutes, one adult ♂ pecked viciously at the head of an immature. All birds running around actively, so could not count & separate the two age groups. 1939 Green feeding with immatures, all of an age, 4 ♂♂ and 2 ♀♀. Red-Yellow pair under E-9 eucalyptus. Orange ♂ in dust bath chased two immatures who attempted to dust. Several birds noted to pick up and then drop the dried peas of the Pigeon Grain mixture - food may be rather short for this many birds.

These two broods, as to size and degree of adult plumage, represent quite accurately the majority of the birds seen on the recent field trips at Hastings and McMillans, except that there may have been more birds in the field that had completed their post-juvenal molt.

California Quail.

Sept. 1. Strawberry Canyon, Alameda County.
1715. About 10 birds flushed from A-1 in the Behavior lab. pen and flew to far side of the pen - all adults or large immatures. 1728. Ad. ♂ in A-9 gave several assembly calls, answered by a bird outside of the pen; about 6 immatures and another pair of adults foraging in this same area. 1746 The Silver family - ♂, ♀, and 4 two-week(?) chicks came to water hole, at least 3 chicks drank. Black ♀ also came out to feed in the same area - she made several rapid short rushes in different directions - perhaps trying to catch insects - but had no chicks with her. 1755 Silver family & Black ♀ feeding together, counted only 4 chicks again, could be some of both broods. Red ♂, Yellow ♀, and Orange ♂ not seen for certain - one extra ♂ with Green part of the time.

Sept. 2. Strawberry Canyon, Alameda County.
0845 Several birds outside the pen at the north corner as I approached, and 3 or 4 birds inside congregated just across the fence from them. All birds remained completely hidden in

California Quail

Sept. 2. Strawberry Canyon, Alameda County.

cover after I finished working inside the pen. 0928. A ♂ feeding in A-9 with at least one chick, 2 or 3 others glimpsed nearby; the adult ♂ feeding very little, mostly guarding. 0951. This group remained in the same area; ident. ♂ as Ø3, counted 4 chicks (3-weeks olds). A ♀ also appeared briefly in this area; ♂ perched on B-7 eucalyptus. 0954 A group of immatures feeding in B-10. 1000 Three Silver chicks to water hole, two drank; fourth chick foraging at base of B-7 eucalyptus where Ø3 ♂ is still perched. 1004 Ø3 ♂ flew to ground; chicks ran under shrub. 1015 Ø3 ♂ flew back to perch on B-7 shrub, then down again to feed in B-8. 1017 6 or more immatures & a probable ad. ♀ feeding in B-9. 1022 Another ad. ♂ joined Silver ♂ and brood for a few minutes, feeding with no interaction, then returned under B-7 shrub; he appeared to be Red (some doubt). A third ♂ in B-9 near the group of immatures should be Green - where is Orange? 1030. Ø3 ♂ to water hole, another ♂ nearby did not drink. Then a ♀ joined the Silver brood and ♂; this ♀ was noted to eat blossoms of Picris echioides.

California Quail.

Sept. 2. Strawberry Canyon, Alameda County.

1048. Ø3 ♂ and 4 chicks to water hole, all chicks drank; a ♀ and another ♂ remained in cover nearby. 1057. Traversed the entire pen at 10 foot intervals to locate birds. Flushed 14 large birds in the South corner - the last a ♀ which fluttered as if unable to fly; one ♂ had previously gone into the North corner, accounting for 7 adults Orange brood of 2, and Green brood of 6; also 2 chicks flew from B-7 eucalyptus - I suspect the other two of this brood ran off unseen. New brood of Black ♀ not seen at all - probably hidden near where the ♀ fluttered off; I do not understand why they have remained hidden all morning, but cannot believe the whole brood (6 at last count) could have been lost without trace.

Sept. 3. Strawberry Canyon, Alameda County.

0808 The group of nearly grown immatures (plus some old birds?) running along the SE fence line in the Behavior Lab. pen. 0814 ♂, ♀, and 3-4 3-week chicks in A-10, then an adult

California Quail.

Sept. 3. Strawberry Canyon, Alameda County.

and an imm. ♂ came into the area. 0838 - Count of 4 chicks with ♂, now in A-9; ♀ has moved off a little. 0850 An ad. ♀ in C-10 and D-10, no chicks in evidence; ad. ♂ motionless in C-10, another ♂ erect on weed clump in B-9. 0901 Orange ♂ flew up to perch in B-7 eucalyptus, with one large imm. ♂ on the ground nearby. 0904. Ø5 ♀ with 4 chicks drank at water-hole, then foraged in center clearing with Ø3 ♂, who did not drink. 0907 Black ♀, without chicks, joined the Silver family in center clearing. 0909 Red ♂ joined the group for a moment, then retreated to D-8. 0911 Silver family and Black ♀ retreated to B-9. 0913 Two large imm. ♂♂ feeding in center, Orange ♂ still on B-7 perch, one imm. drank; assembly calls heard outside. 0914. The other imm. ♂ drank, then both moved down to C-9. Green brood of at least 5 young and one ad. ♂ seen in E-10 along the fence. Yellow ♀ not accounted for. 0916 Orange ♂ flew down from perch, into B-9. It appears that the entire second brood of Black ♀ has failed to survive - although there were 6 at age 1 week

California Quail.

Sept. 3. Strawberry Canyon, Alameda Co.

None of the birds feeding in the center have taken any seed from the pans while I have been watching - most feeding is being done among the natural weeds, apparently there is no food problem at all at this time. Watch corr. + 21 min.

1615. Weather at Behavior Lab 8/10 Ci cloud cover, light wind. Serviced trap outside pen. Imm ♂ #56614 recaptured, released.

Sept. 4. Strawberry Canyon, Alameda County.

1045. Two birds in the trap by the Behavior Lab pen: #56614 imm. ♂ recaptured, released; a younger imm. ♂, very little black markings around the eye, banded #56616 and released. 1105 ♀ with 4 3-week chicks and an adult pair in A-10; several large birds along SE fence line. 1134 ♂ with chicks ident. as ~~Orange~~ φ3; Black ♀ feeding near, and another ♀ a few feet off. Orange ♂ in the same area, moved along fence in B-10. Another ♂ also noted in B-10, and several immatures. 1137 Heard a Cow! call, apparently outside the pen. 1139 A family group with immature young noted

W. J. Francis
1963.

California Quail.

Sept. 4. Strawberry Canyon, Alameda Co.

moving along fence outside of B-10 and A-10.
1141 Adult pair plus two large immature ♂♂ (Orange?) keeping pace with birds outside fence in A9 and A8. Ø3 ♂ and 4 chicks drank at water hole, then were joined by Black ♀ in feeding around the pan of grain in C-5 (some apparently spilled. Ø5 ♀ came to water hole. All three other ♂♂ and Yellow ♀ are foraging in A-9 with several immatures. 1145 Silver family plus Black ♀ retreated to cover. 1150 Total of ten birds counted along SW fence, prob. only one adult pair, or an extra ♂ also. 1156. Filled water hole, and scattered ½ can of Pigeon grains in cleared area in A3 and A4. Pan of Hen Chow shows little consumption.
1637. About 8 large birds have been seen along the SE fence. Silver family (♂, ♀, 4 chicks) plus Black ♀ came from E-8 to water hole, then fed in pan with Hen Chow in CD-4. Yellow ♀ appeared below water hole. 1646. Ø5 ♀ chased Yellow ♀ away, Black ♀ remained with Ø3 ♂, then all retreated to weedy cover in C-8.

California Quail.

Sept. 5. Strawberry Canyon, Alameda Co.

1708. An adult pair and 4 or 5 immatures came into A-10 along SE fence — one bird either imm. or ad. ♀ — prob. the latter, since the Green brood when last seen did not appear to be near completion of molt. Assembly call heard outside the pen. 1710 Silver brood foraging at edge of weeds in E-6. 1711 A single "Cow!" call, either inside the pen or very close to it. ф3 ♂ and 4 chicks moved into D-8. 1715 ф5 ♀ joined the rest of Silver family — another ♀ under the E-9 eucalyptus (only one ♀ can be with group in A-10, then).

Sept. 9. Strawberry Canyon, Alameda Co.

0940. On arrival at the Behavior Lab. pen, saw the complete group of quail in the pen feeding together as a covey; counted 16 well-grown birds plus the four 4-week chicks. This indicates 7 survivors of the Green brood, although no more than 6 have been counted at once for several weeks. Another family of an adult pair and 4 immatures were sitting on the top edge of the pen just above the penned birds.

Water was almost gone in the

W. J. Francis
1963.

228.

California Quail

Sept. 9. Strawberry Canyon, Alameda County.

pen, and the grain in the two pans was completely cleaned up (juncos and *Microtus* are partly responsible). I filled pans & scattered grain, with Hen-Chow nearest the water hole, Pigeon Grains in ~~a~~ pan in CD-4. The eucalyptus, especially in D-4, has put out considerable growth, and droppings indicate that this bush is one favorite loafing/roosting site. 1025. On leaving the Behavior Lab, I saw an adult pair with 10 chicks 3-4 weeks old. They did not fly when I got out of the car to open the gate, but only ran, without great commotion to the edge of the road — the ♂ went to the right, the ♀ to the left. I stopped to write these notes just outside the gate, and the whole brood ran back to join the ♂ near the gate, the ♀ following. These chicks appeared slightly smaller than the Silver brood in the pen, perhaps 2-3 days younger.

Sept. 10. Strawberry Canyon, Alameda Co.

0945. Birds in pen at Behavior Lab.

California Quail

Sept. 10. Strawberry Canyon, Alameda County.
in a group, including 4 half-grown chicks of Silver brood. Two smaller groups of quail just outside the pen, including some young birds.

Sept. 11. Strawberry Canyon, Alameda County.
0810 Most of the birds in the Behavior Lab. pen are in a loose group, strung out along the SE fence and patrolling back and forth. The 4 month-old chicks are feeding in A-10, somewhat separated from the others. 0825 Ident. ♂ with 4 chicks as Φ3; a ♀ also with the group. 0830 Twelve birds visible in addition to Silver family. 0840 Ident ♀ with Silver family as Φ5 - the group then joined by Black ♀. 0845 Total count 19, Silver family + Black ♀ retreated to weeds in B-8, remaining birds still along the SE fence.
0847 When I entered the pen to fill the water hole, most of the birds took flight to the East corner then ran up along NE fence - they are extremely skittish compared to previous months; one bird flew back down the NE fence and collided, apparently quite hard,

W. J. Francis
1963.

California Quail

Sept. 11, Strawberry Canyon, Alameda County.

with the top of the pen – most birds avoided collision with the fence quite well.

Sept. 12. Strawberry Canyon, Alameda Co.

1710 Most birds in cover as I approached the Behavior hut pen, and about 10-12 ran along SE and NE fences when I entered to read the rain gage.

Sept. 13. Strawberry Canyon, Alameda County.

1010 A single quail flushed from near the hut as I approached the Behavior hut. pen, and 2 or 3 others visible along fence line in A-10. Grain around trap outside showed no signs of being used. 1030. A ♂ moved from the position where he had been crouched almost motionless for 20 minutes in C-10; a ♂ with at least 3 Silver chicks foraging in A-10; and a female perched on weeds in B-8 while movement of other birds was glimpsed behind her. 1033 heard assembly call heard outside the pen. 1034. The whole covey came into center clearing to feed. counted 15 large birds + ~~7~~ 4 half-grown chicks.

California Quail

Sept. 13. Strawberry Canyon, Alameda County.
One of the Orange immatures has almost completed his molt, with full black throat, except for a slightly ragged appearance and incomplete border on the lower edge. More birds fed at the pan of Pigeon Grains than did at the Hen Chow. 1041. The birds scattered into the edges of weedy cover. A bird noted flying down from B-7 eucalyptus may be in addition to the 15 counted. There was no evident grouping in families or pairs of the large birds; however, difficulty in identifying nearly grown immatures may have masked such a grouping. At any rate the appearance is that of a typical fall covey.
1055 Adult pair with 4 half-grown (Silver) chicks in B-9. Two imm ♂♂ (Orange) in E-8; 4 immatures of Green brood flew from N to S corner of the pen. Apparently in scattering the families do tend to remain together. 1102 Not a bird in sight, all having gradually drifted into cover. 1118 Silver family (pair + 4) foraging near water hole, two chicks drank, returned to cover in

W. J. Francis
1963.

California Quail

Sept. 13. Strawberry Canyon, Alameda County.
E-7 at 1123, with another (prob. imm.) ♀.

Sept. 15. Strawberry Canyon, Alameda County.
1400. Most birds in the Behavior hab-pen grouped along fence in A-10 and B-10; counted about 12 grown birds and 3 half-grown young. 1410 Green ♂ with 3 imm. ♂♂ and 3 imm ♀♀ came into center clearing, looked in the now empty food pans, and foraged in the center area. 1412 Yellow ♀ joined Green family in center. 1416. ϕ3 ♂, ϕ5 ♀, 4 half-grown chicks, Red ♂, and Black ♀ foraging in A2 to A4. 1417 Orange ♂ plus immature ♂ (separated from adult only by the lack of white border beneath the black throat) to water hole and foraging in the vicinity. 1418 Another ♂ joined these two — both ~~z~~ by elimination and lack of a band he is the 2nd Orange immature — however the plumage is apparently fully adult now, in advance of the stage his brother is in. This appears to be a full count, totalling 19; the count of 20 a few days

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California Quail

Sept. 15. Strawberry Canyon, Alameda County.

ago may have been an error, or one Green immature is not staying with the covey. Today noted the different broods remaining separate, and the ~~...~~ adults without young attached to one or the other family group. A number of assembly calls appeared to be from outside, a from penned birds responding to outside calls.

Sept. 16. Strawberry Canyon Alameda County

1910 I entered to Behavior Lab pen to check the rain gauge, and disturbed a number of quail which had already gone to roost in D-4 eucalyptus; 3 minutes before sunset, but quite dark due to overcast.

Sept. 17. Strawberry Canyon, Alameda Co.

1730, Checked food + water in the Behavior Lab. pen: Pigeon Grains had been entirely consumed, including whole dried peas and whole corn kernels. About a small handful of Hen chow remained in the other pan. Replenished both with ½ can each of respective grains, and filled water hole.

California Quail.

Sept. 18, Strawberry Canyon, Alameda County.
1730 a brood of 10 immature quail in the trap in the Behavior Lab, no old birds noted, but all but two escaped due to faulty construction and handling of holding net. Banded imm. ♀ 56618, and recaptured imm ♀ 56616. Reset and baited the trap.

Sept. 19. Strawberry Canyon Alameda Co.
1400. Checked food in the Behavior Lab pen: Pigeon Grain entirely consumed, except for a little scattered around the pan area - the pan itself had been moved about 2 feet. A good handful of Hen chow remained in the other pan - no additional food given at this time.

Sept. 20. Strawberry Canyon, Alameda Co.
1025 Three quail in the trap. Banded
#56617 - imm. ♂, completely adult plumage, molt completed.
#56619 - imm. ♂, still molting. black of throat incomplete, body feathers still sheathed.
Collected third bird, an adult ♀, for examination of gonads and liver -

California Quail

Strawberry Canyon, Alameda County:

Sept. 21. 1330 Took the following 9 birds in the trap in the Behavior Lab:

Imm. ♂ - banded #56620, and released.
Imm. ♂ - banded #56621, and released.
Imm. ♂ - banded #56622, and released.
Imm. ♀ - banded #56623, and released.
Imm. ♂ - recapture, band #56614
Imm. ♀ - recapture, band #56616.
Imm. ♀ - recapture, band #56618.
Ad. ♀ - collected (band #56613)
Ad. ♂ - collected (unbanded)

All immatures seemed to be of the same age - feathers on back of the neck poorly developed, with sheaths, black only beginning to develop on throat of ♂♂, although ♂ pattern nearly complete on top and sides of head. Rebaited and set the trap.

Sept. 22. 1300 One bird only in the trap - ad. ♂, banded # 56624, and released. Molt almost complete, feathers on back of the neck still sheathed, those on the head not.

California Quail

Sept. 23. Strawberry Canyon, Alameda Co.

0830. Checked food pans in the Behavior Lab. pens - Hen Chow pan empty except for a few grains - pan had been moved, (probably by rodents). The other pan still had nearly half its Pigeon Grain. Filled the empty pan with ½ can Pigeon Grains and relocated it in D-2.

Sept. 25. Strawberry Canyon, Alameda Co.

0838 Five birds visible along the fence in Behavior Lab. pen, in A10 and B10.
0853 About seven birds feeding in the east corner (A-10), all essentially full grown, ~~some~~ ♂♂ with black throat and edging not quite complete.
0906. All birds have remained in weedy area along the lower fence, so no identification has been possible. The brood of Aug. chicks (now 6½ weeks old) were not seen this morning. Birds flushed readily when I entered the pen and there appeared to be the full complement as last counted.

Sept. 26. Strawberry Canyon, Alameda Co.

1445. Birds in the Behavior Lab. pen

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California Quail

Sept. 26. Strawberry Canyon, Alameda Co.
Were all (or all those seen) under the shade of the eucalyptus (temp. 86°) rather than in the open grass (temp. 110°). They both ran & flew along fence lines when I entered the pen. I did not remain to observe at this time because of the heat.

1845. Quail ran for cover from the center as I approached the observation hut. 1850. Group of 6 or 8 birds around E-9 eucalyptus, some running around, some flying up into the brush & then down. 1754 Silver pair with 3 immatures moved up to E-1 – one bird appeared larger, may be a Green imm ♀; one silver chick stayed some distance from parents. 1903 Green ♂ and an unident. ♀ fed near water hole. Orange ♂ in dust bath, 3 or 4 others around D-4 eucalyptus. Two young ♂♂ to water hole, unbanded with complete adult appearance, probably are the Orange brood. 1910. Most birds appearing to be going to roost in E-9 and D-4, but with much moving around, noise, and flying up and down

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California Quail

Sept. 27. Strawberry Canyon, Alameda Co.

0910 Penned birds out of sight as I approached the Behavior Lab, none in the trap. 0925 Baited trap with Pigeon Grains in the aluminum pie tin which the birds have been feeding from. Counted 15 birds running along the SE fence when I entered the pen. 0950. All birds remaining near the fence, partly under cover. Noted the 4 7-week chicks feeding near Black ♀ in B-10; about 7 birds in a group in E-10. 1000. The quail have not left the edge of the fence at any time, so discontinued observations.

1640. A small group of quail (6-8, most immatures) flushed from near the pen as I approached. In the pen, most birds were patrolling along the lower (SE) fence, none in the trap. 1658 Several Assembly calls outside the pen, at least two different birds. 1701 Φ3 ♂, Φ5 ♀, and 4 7-week chicks feeding in E-2; these young are almost full size, with a hint of dark feathers around the eyes of at least one ♂. 1705 6 apparently unbanded birds feeding at edge of weeds in E-6; probably the

California Quail

Sept. 27. Strawberry Canyon, Alameda County.
Green brood now in nearly complete adult plumage, white edging below ♂ throat not quite complete. Green ♂ joined this group, which consists of 3 ♂♂ and 3 ♀♀. Two other ♂♂ also emerged, then saw Orange ♂ in D-2 and several other birds running into weeds as a passer-by startled all birds. 1734. Most of the birds are congregated in the east corner behind the large *Eucalyptus* showing no inclination to come into the open after being disturbed; ended observations.

Sept. 30, Strawberry Canyon, Alameda County.
0820 One immature of Silver brood in the trap inside the pen, a ♂ by the presence of black feathers under the eye; weight 85 gms. at age 7 weeks. Reset + baited trap. This bird gave the "Psew" distress call repeatedly while running about in the cage, the only time I have heard this yet.

California Quail.

Oct. 2. Hastings Reservation, Monterey County.
During the morning noted coveys in the gully between office and barn; at the bridge just outside the entrance gate, and on both sides of the Greenfield road below the first bridge up from the entrance.
1150 On the road into the reservation, I saw a Cooper Hawk fly across the road, from the creek to the hillside, carrying a large bird which I judged to be a full grown quail; the flight of the hawk was labored as if he were carrying a capacity load.

Oct. 3. Hastings Reservation, Monterey County.
0850 About 15 quail feeding around the Bell house, not distinguishable into age groups. These birds are staying away from the trap, which is surrounded by Magpies.
1755 A group of about 10 quail ran down the dirt road, apparently from their daytime roosting area in the gully near the barn, and began feeding on the level ground near the White house. 1807. Counted 6 ♂♂ and 3 ♀♀ in this group, with

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California Quail

Oct. 3. Hastings Reservation, Monterey County

nothing to distinguish adults from this year's young. 0809. Heard considerable commotion of quail calls in the brush on hillside below the weather station, near my observation point.

Oct. 4. Hastings Reservation, Monterey County

0840. While checking the traps, I flushed several groups of quail, at the edge of the brushy hillside and in the open field between the Davis and White houses. All told I estimated at least 60 birds (last winter there were only 16 certain, 19 maximum, in this area). Quail have apparently not gone near the traps, being able to find plenty of food and water elsewhere; yet they ate readily the bait grain remaining on the ground where I had removed the trap in front of the White house. At the large trap just upstream from the bridge near the gate, bait is being eaten little if at all - yet it is located in proximity to excellent cover, water, dust-baths, and in

California Quail

Oct. 4. Hastings Reservation, Monterey County

an area where numbers of quail have been seen on several occasions. I suspect John Davis is right in saying that this is poor trapping weather – in cold rainy weather the quail will flock into the traps for the bait; now they find all the food they need with little effort without going near strange structures.

1740 Flushed a number of quail in the brush near the weather station, who flew further down in same brush patch. At the same time 12 quail are feeding in front of the White house, but ignoring the trap and the grain around it.

1800 12 quail re-emerged from brush after being startled, + are feeding near the trap in front of the White house; there appear to be 5 ♀♀ and 7 ♂♂, no age estimate possible.

1808 13 quail (1 to 6 at a time) flew from hillside brush to join the others feeding. A group of 11 ran past the White house toward Bell's, followed in a few moments by all but half a dozen of the others. 1816. The last 8

California Quail

Oct. 4. Hastings Reservation, Monterey County. birds ran from in front of the White house to join the group feeding in front of Bell's; 23 birds in sight, 14 in a compact group, 9 more scattered but nearby.

Oct. 5. Strawberry Canyon Alameda Co. 0840. Most of the birds in the Behavior Lab. pen were running along the fences as I was servicing trap and instruments, with an occasional short flight when I approached closely. No birds went in the trap while I was at the pen until 0930.

Oct. 8. Strawberry Canyon, Alameda Co. 0820 Took 1 bird in the trap in Behavior Lab. pen - immature ♂ of Silver brood, weight 137 gms. Banded #56625, returned to the pen. Primaries 1 thru 4 molted; retrices nearly all molted, and the bird nearly tailless since new retrices are undeveloped. Reset & rebaited trap with 1/2 can Hen chow.

California Quail

Oct. 9. Strawberry Canyon, Alameda County

0815. At the Behavior Lab. pen; all birds out of sight as I approached. When I entered the pen to check trap and instruments, a few birds were seen running along the fence; none flew, as has been the case recently when they were disturbed. Even the birds seen were quite unobtrusive in the matted dead grass, and presumably the others are hidden in similar cover. This behavior appears definitely weather related, being in marked contrast to previous few days with good weather, while today is in the cloud and very damp.

Oct. 11. Strawberry Canyon, Alameda County

0825 Four quail entered the unset trap in the Behavior Lab pen while I was in the pen — I hastily blocked the exit + captured two — one escaped around the exit blockage, the other through the entrance. The captured birds were: immature ♀ 156 gms. banded pink, molt just about complete, some breast feathers still sheathed - must be Green brood -

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California Quail

Oct. 11. Strawberry Canyon, Alameda County.

Immature ♂, wt. 177 gms., molt complete except for sheaths on a few breast feathers; banded light green; probably of Orange brood, judging by weight.

Oct. 13. Strawberry Canyon, Alameda County.

1700 Noted 2 or 3 birds in the insect trap in the Behavior Lab. pen as I entered; grain in and around the trap was completely eaten, indicating that the birds are going in rather freely.

Oct. 14. Strawberry Canyon, Alameda County

0810. Took the following birds in the trap in the Behavior Lab. pen:

1) Immature ♂ (Silver), wt. 139 gm. #56625
2) Adult ♂ (Yellow), wt. 171 gms., body molt complete, #9 primary 2/3 grown, #10 primary 1/3 grown, both sheathed.
3) Immature ♂ (Silver), wt. 115 gm.; all juvenile retrices, very ragged + some missing. #5 primary less than half grown. Banded #56626.
   Note similar molt stage to #56625, and great difference in body weight.
4) Immature ♀ (Silver) wet 130 gm. Banded Blue.

California Quail

Oct. 14. Strawberry Canyon, Alameda County.

Wing molt similar to the two ♂♂ of the silver brood. Outer retrices still retained, the others less than half grown.

5) Adult ♀ #56605, wt. 176 gms. No. 9 and 10 primaries about ½ grown, three outer retrices still sheathed, outer rectrix less than half grown.

6) Imm. ♂ #56625 recaptured.

Oct. 15. Strawberry Canyon, Alameda Co.

1730. Two birds in the open trap:

1) Imm. ♂, wt 181 gm., banded #56627. Primary #8 little over half grown, #7 near full size, still sheathed, molt otherwise appears complete.

2) Imm. ♂ wt 175 gm., banded #56628 Molt exactly as in the first bird.

Oct. 16. Strawberry Canyon, Alameda County.

0820. Following birds in the trap in the Behavior Lab. pen:

1) Imm. ♂ #56625 recapture.

2) Imm. ♂, wt. 171 gms. Held for Zoology Dept. Molt complete except for sheath on 8th primary, which was not quite full length.

3) Imm. ♀ BLUE recapture.

California Quail

Oct. 16. Strawberry Canyon, Alameda County:

4) Ad. ♀ YELLOW recapture.
5) Imm. ♂ #56626 recapture. When released this bird flew up to the fencing in the pen & clung near the top for a few seconds before returning to the ground - same behavior previously seen (but not noted), perhaps in the same bird.
6). Ad ♀ #56605 recapture.

1630. Two birds in trap in the pen - #56625 and 56626 ♂♂, recaptured.

Oct. 18. Strawberry Canyon, Alameda County.

0930. Birds in the Behavior Lab. pen flew into the air with slight disturbance when I serviced the trap inside the pen, and several collided with the top and sides, though not very severely. Bait in the trap area has been used rather sparingly.

Oct. 19. Strawberry Canyon, Alameda Co.

1120 Took the following birds in the trap inside the Behavior Lab. pen:
1) Imm. ♂ #56625, recapture. Released outside of the pen.

California Quail

Oct. 19. Strawberry Canyon, Alameda County

2) Imm. ♂ # 56626, recapture. Released inside the pen; the bird then flew to a "perch" clinging to the fencing at the top of the gate in A-1.

3) Imm. ♂ LT. GREEN, recapture. #8 primary 3/4 grown in this bird.

4) Ad. ♀ #56605. Primaries #8, 9, & 10 sheathed, #9 and 10 3/4 the length of the others.

5) Imm. ♀ BLUE, recapture. Primary #6 just emptying, 7 & 8 not yet shed.

6) Imm. ♂ #56627, recapture. Wt. 181 gms. Primary #8 4/5 grown, still sheathed. Released outside the pen.

7) Ad. ♀ BLACK. 172 gms. Primary #9 1/4 grown, #10 just emptying.

1155 Counted a total of 16 birds remaining in the pen, accurately. This means there are still 7 in the GREEN brood (June 25 hatch).

Oct. 21. 0805 No birds in the trap in the Behavior Lab. pen; at 0840 took one bird: Ad. ♂, GREEN, wt. 194 gms. Primaries 9 + 10 still sheathed, #10 about 4/5 grown. 0900. observed the birds without disturbing to this time;

California Quail

Oct. 21. Strawberry Canyon, Alameda County.
after settling down, the birds remained unusually quiescent, not running about or feeding.
1730 Took imm. ♂ LT. GREEN in the trap. When releasing him, I set him down on the ground, and stroked his back as I released him. he remained squatting on the ground without moving. I reached out and stroke his back again several times, without him moving. When I then flicked the end of his tail feathers he ran off a few steps and took flight.

Oct. 22. Strawberry Canyon, Alameda County.
All birds remained quiet, mostly hidden, while I observed the pen from 1105 to 1205. I entered the pen & disturbed the birds in E-10 corner – all but 2 ran to A-10 corner; Black ♀ and an unmarked imm. ♂ remained along the fence in C-10 and E-10 for several minutes, even when I was so close as 30 feet.

California Quail

Oct. 24. Strawberry Canyon, Alameda County.
0910 Following birds trapped inside the Behavior Lab. pen: Adult ♀ Black, recapture; imm. ♂ 56626 recapture, #5 primary nearly full length but sheathed for half its length, #6 primary just emerging from sheath half the full length.

Oct. 28. Strawberry Canyon, Alameda County.
0815 - Five quail in the trap in the Behavior Lab. pen, as follows:
1) Ad. ♂, Green. 172 gms. Molt complete.
2) Imm. ♀, Pink. 140 gms. #8 primary still sheathed, nearly full length.
3) Imm. ♂ #56628. 160 gms. Molt same as Pink ♀. Gave distress call in hand.
4) Imm. ♀, 159 gms, first capture. Banded #56629 and Orange on same leg.
5) Imm. ♂, Lt. Green, 162 gms. Molt same as Pink ♀, ♂ #56628.

Oct. 30. Hastings Reservation, Monterey County.
0850. Small covey of 9 quail feeding near the Bell house, one ♀ inside the trap. At 0855, with a ♂ just outside, the ♀ in the trap walked out of the entrance tunnel, apparently following the grain trail just as in entering.

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California Quail

Oct. 30. Hastings Reservation, Monterey County.
A bobcat was seen at the edge of the brushy hillside last night, near a large bunch of quail (about 60) that took cover in the brush after feeding in the gully. This disturbance may account for so few birds being around to-day, the covey having perhaps scattered to the higher hills under the bobcat threat. 1045 No quail in the traps near the entrance gate, but much of the grain eaten in one of them - probably rodents.

Oct. 31. McMillan Ranch, San Luis Obispo Co.
0915-1120. No birds in the trap at Marion Spring, but some of the grain at the entrance was eaten. No quail seen in an hour & a half hike in the vicinity, but a few calls heard from the middle ridge of Portugee Canyon, and the hillside to the south.
1700-1800 No birds in the trap. Checking the coveys on the ranch from the pickup, we saw a very large covey along the fence approaching the roosts

California Quail

Oct. 31 McMillan Ranch, San Luis Obispo Co.

at the old house - probably about 200 birds; in the Trees area across the ridge, flushed about 125 birds, and later another group of 25 or 30 from the Atriplex planting, with still more birds glimpsed in & around the brush, not flying; and a covey of about 80 (by a previous count) near the old cabin by the junction with Gillis Canyon Road. At the Ranch house, quail were already in the roost when we returned.

Nov. 1. No quail in the trap, which I left unset, & found no quail in walking over the ridge between 0900 & 1000. A bunch of about 30 flushed in Marion Canyon as we approached the spring, and later Ian McMillan with the dog flushed three coveys from the bottom of lower Portugee Canyon; he estimated 450 birds all together in this area.

California Quail

Nov. 2. Hunter Liggett Military Reservation, Monterey County. Quail season opens to-day! Checked bags at Permit station as hunters checked in: Total of sexed and aged birds today as follows:

Adult ♂	-	84
Adult ♀	-	53
Imm ♂	-	226
Imm ♀	-	211
Total	-	574.

175 additional birds were skinned before checking, or reported as taken, with no sex and age.

Percent of Immatures	:	76.0
Imm. / Adult	:	3.19
½ (Imm / Adult ♂)	:	2.60

Nov. 4. Strawberry Canyon, Alameda County.
0815 No birds in the traps in the Behavior Lab. pen. Saw only 8 birds moving along the edge of the fence, all birds tending to take cover from the storm.

Nov. 6. Strawberry Canyon Alameda County.
0940 Quail in the Behavior Lab. pen all in a group along lower fences, flew briefly when I entered the

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1963.

California Quail

Nov. 6. Strawberry Canyon, Alameda County.

pen to service trap and rain gage. All the grain in sight had been eaten. 0955 Several birds began moving out of the E-10 corner along the SE fence line as a little sunshine broke through. As they reached the vicinity of the trap they fed vigorously on the grain scattered around. 1000 Green ♂ perched on top of the trap, as 6 or 7 others ran off at the sound of an approaching heavy truck outside the Behavior Lab, and workmen talking on the highway just above the pen. 1005 a ♂ entered the trap, and a moment later Green flew down from the top. 1015 Truck & workmen moved off. Several bird visible huddled in E-10, others under cover. 1022 Birds again began to move out of the corner as bright sunshine broke through. 1025 a car passing slowly on the road inside the Lab. did not affect the feeding of 6-7 birds near the trap. 1026. a very young male (Aug. brood) feeding alone in A-9. 1029 Green ♂ again on top of the trap - suggests he is still looking after his brood of young!
1045 Took the following birds

California Quail

Nov. 6. Strawberry Canyon, Alameda County.

from the trap:
1) Ad. ♀ 56605. Wt. 177 gms. Molt complete.
2) Imm. ♂ LT. GREEN - Wt. 183 gms. " "
3) Ad. ♀ YELLOW - Wt. 178 gms. " "

Nov. 10. Strawberry Canyon Alameda County

1630. All birds in the Behavior hab. pen out of sight in cover as I approached, flushed from East corner (E-10) when I entered to service trap + rain gage, counted 11 flying to N corner, and 3 more ran up to join them - should be 2 more, not seen.

Took following in the trap:
1) Ad. ♂ #56603 - Wt. 209 gm. Released outside.
2) Imm. ♀ PINK - Wt. 174 gm. Returned to pen.
3) Ad. ♂ Orange - Wt. 189 gm. " " "
4) Imm. ♀ Orange-29 - Wt. 189 gm. " " "
5) Ad. ♀ Black - Wt. 186 gm. " " "
6) Imm ♂ #26 - Wt. 104 gms. " " "
All rectrices sheathed, one just erupting.
7) Ad. ♀ #05 - Wt. 181 gms. Returned to pen.

California Quail

Nov. 11, Strawberry Canyon Alameda County:

0815. Birds in the trap very quiet until I approached. Took the following:

1) Imm ♂ - Lt. Green. Wt. 182 grams. Molt fully complete.
2) Imm ♀ - Pink. Few coverts still sheathed.
3) Imm. ♂ - 56628. Wt. 183 gms. Molt complete.

Nov. 14. Strawberry Canyon, Alameda County.

0830. Birds in the Behavior Lab pen out of sight under cover (mostly in dead branches piled in E-10) in windy wet weather. About a dozen ran up the fence to E-1 when I entered the pen, then flew back down as I returned - one "ragged-tail" indicated a ~~late~~ bird of the August brood still molting.

0852. After a series of assembly calls (source not located) the covey moved along the fence to C-10, then up to the central area of the pen, feeding vigorously. No rain at this time, + the wind in somewhat of a lull. A strong gust of wind after this lull made no apparent impression on the feeding quail.

0903 About 10 birds have worked over to areas A-7,8,9, still feeding.

California Quail

Nov. 14, Strawberry Canyon, Alameda County

0909. I entered the pen & "herded" the birds toward the A-1,2 areas where most feed is scattered; they were relatively tame, allowing me to approach within 30 feet before flying; a group of six flew to E-1, and at least seven toward A1-2; the latter group was also herded into A-1, but all left when I returned to the hut - at least they have seen where food is located. 0935. No sign of any movement of birds until now, when 3 moved slowly along fence in B-10. 0940. No further activity, terminated observations.

Nov. 18. Strawberry Canyon, Alameda County.

0815 Birds in the Behavior Lab pen were out of sight in cover when I arrived; noted two or three in and around brushy cover in E-10 corner as I was servicing trap and instruments.
0900 After taking station in the observation hut, noted seven birds along the fences in E-1, standing quite motionless in the sun with compacted feathers - suggesting that they

California Quail

Nov. 18. Strawberry Canyon, Alameda County.

are warming themselves after the cold (43°) night. 0906 Counted 4 ♂♂ and 4 ♀♀ in this group. 0910 Noted another bird crouched motionless in D-1, and entered the pen to examine it - this was a young ♂ and apparently either sick or very cold. It did not move as I approached and only indicated life by blinking its eyes. When I reached out for it, it ran off just as I touched it, before I could grasp it, then flew a short distance (c. 20') to the cover of the eucalyptus in D-4. The other 8 birds meanwhile had run down the fence line toward E-10.

1010 In a 50-minute walk around the area surrounding the Behavior Lab., I saw no quail at all, but several brush patches which appeared to offer ideal cover. Found feathers on the road southwest of the Lab's west gate - two primaries + numerous down feathers, not certainly identified. On returning to the pen, the quail appeared to be in the E-10 corner brush pile, judging from half-a-dozen individuals seen moving in and out.

California Quail

Nov. 20. Strawberry Canyon, Alameda Co.

0830 On entering the Behavior Lab. pen I disturbed quail which were under brush in the E-10 corner, and counted 14 as they ran along the fence. A few minutes later they flew from A-7,8 to the N corner; a single bird flew with difficulty a short distance to the brush pile in ~~[illegible]~~ B-8, perhaps the same bird that appeared sick yesterday.

0922 Quail have remained almost completely in cover up to this time, with only a few birds at at time seen moving occassionally near the brush in E-10.

1615 Returned to check birds in the pen. This evening they were in smaller groups (family groups?) of 5, 4, and 4 birds respectivly in E-10, B-8, and A-8, plus 2 single birds for a total of 15. No sign that any birds had gone in the trap, although the grain out-side was pretty well consumed.

California Quail

Nov. 21. Strawberry Canyon, Alameda Co.

0820. Birds in the Behavior Lab pen in cover, few seen near brush in E-10. Grain was eaten up around the outside of the trap, probably mostly by juncos + song sparrows.

0832 Four birds (2♂ 2♀) noted making short forays out of the brush in the E-10 corner. The birds run a few steps along the SE fence, then turn + run back toward the corner, none getting more than 10 feet away. The individual birds more or less follow one another but with a second or two lag so that there is much crossing of birds going in different directions. 0848 After a few minutes during which the birds all stayed in or very close to the brush, 3 or 4, possibly the same group, ventured out along the SE fence to between 10 + 20 feet from the corner, at first feeding, then becoming motionless. Ended morning observations at 0850, resumed post at 1018: Birds just as before, most in cover and about 4 along SE fence in E-10, some movement of 1 or 2 birds at a time. The birds are still in a shaded and probably quite cool

California Quail

Nov. 21. Strawberry Canyon, Alameda County.

area, although over half the area in the pen, including the baited trap, is in full sunshine. 1053 Quail showing some activity in the E-10 corner, with at least 8 birds out of cover and feeding along 20 feet of fence-line. A ♂ chased a ♀ for about 6 feet. At least 6 ♂♂ in this group. 1058 This activity ceased, only 4 birds visible & these again motionless along the fence. 1100 One young ♂, banded, fed for one minute around the trap, then retreated under D-4 eucalyptus. 1109 ♂ came out from D-4 eucalyptus, giving several "plit" calls, & fed near trap, again for just one minute. He came out again almost immediately, then went back to cover after feeding for a few seconds. Four birds still visible in E-10, all crouched motionless along the fence. 1116 ♂ walked from D-4 to E-1, gave two shortened assembly calls, and began feeding; at 1118 ran down NE fence to about E-7. 1035 I gave several assembly calls on the artificial quail call, after which the birds

California Quail

Nov. 21. Strawberry Canyon, Alameda County.

which had been motionless along the fence in E-9 began running back + forth in the same area. 1140 Movements ceased, only one ♂ in sight at edge of brush in E-10 corner. Another series of 6 calls was not followed by any action. At 1145 I entered the pen + obtained an accurate count of 15 birds leaving the corner in E-10; none appeared to be weak or injured.

Nov. 24. Strawberry Canyon, Alameda Co. 1500 All birds in the Behavior Lab. pen appeared to be in the east corner (E-10); counted 13 running up the fence to the north corner, and 1 additional flew + ran as I approached the corner.

Nov. 25. Strawberry Canyon, Alameda County.

0950. Took the following birds in the traps: 1) Ad. ♀ yellow 2) Imm. ♂, wt. 178 gms. banded #56634, + released outside. 3) Ad. ♀ 56605 4) Imm. ♂, banded previously, not examined.

California Quail

Nov. 27. Strawberry Canyon, Alameda County.

0950. Birds in the Behavior Lab. pen apparently all congregated in brush in East corner, a few individuals seen moving there. At 1030 I entered the pen + flushed the birds from this corner, counting 14 as they ran or flew towards the North corner.

Nov. 28. Strawberry Canyon, Alameda County.

0930. Took following birds in the trap:

1) Imm. ♂ #56626 wt. 122 gms. #7 primary sheathed, 4/5 grown.
2) Ad. ♂ RED, wt. 200 gms. Molt complete.
3) Ad. ♀ YELLOW, Left 2+4 and Right 4 claws missing.
4) Ad ♀ 56605. Wt. 182 gms. Checked toes - all claws OK.
5) Ad. ♂ GREEN.
6) Imm. ♂ 56628. Wt. 188 gms. One head plume erupting, others full grown. Molt complete

Grain in the trap was not all consumed.

Dec. 1. Strawberry Canyon Alameda County.

1620. Quail in the pen moving about quite a bit, but not revealing themselves. Noted groups along both NE and SE fences and at the base of E-9 eucalyptus.

California Quail

Dec. 1. Strawberry Canyon, Alameda County.

1632. Quail commenced feeding around the trap area 1634. Counted 14 quail, one ♀ inside the trap. An immature (June) ♂ chased another June ♂. Noted one unbanded ♂. All birds feeding rapidly. The *Microtus* seemed to be less shy when the quail are about - 4 at once were feeding with the covey of quail. 1638 Some quail wandered off, only 7 near the trap (plus one inside). 1640 Only one ♂ feeding near the pen, the others foraging in E-3, or preening under the D-4 eucalyptus. 1644 Blue ♀ and Orange ♂ came out for a few seconds, separately, the returned to shelter of eucalyptus. 1645. All birds have left the vicinity of the trap. 1650. All sunlight is now gone from surrounding trees and hills, and quail are out of sight. 1651. Orange ♂ + Black ♀ came out to feed for a few seconds, then 3 more quail from E-6. 1653. Now 10 quail feeding near the trap. 1655. Only 1 ♂ remains near the trap - he is generally close to the ♀ inside. 1656. Orange-29 ♀ also feeding near trap. 1657 Unbanded ♀ now near the trap!

California Quail

Dec. 1. Strawberry Canyon, Alameda County,

1658. Two ♀♀ left, one ♂ still by the trap.
1659. This ♂ ran to dusting area and attempted to dust — no dust here, the soil being well settled by fall rains.
1705. Released the ♀ in the trap + reset it. Other birds are apparently in their roosts, although still moving about.

Dec. 2. Strawberry Canyon, Alameda County.

0820. Two birds in the traps in the Behavior Lab. pen. 1) Imm. ♂ 56626, wt. 127 gms. Plumage nearly complete, #7 primary 9/10 grown with sheath at base, #8 not yet shed. 2) Ad. ♀ 56605.

Dec. 4. Hastings Reservation, Monterey Co., Calif.

0750. Saw a good-sized covey, rough count of 50 quail, feeding between the Bell and White houses, and also a ♂ and ♀ in front of the White house near the trap. Keith White reported having made a "good" count on Nov. 13 of this covey: 21 ♂♂ and 28 ♀♀. 0900 Took the following quail in the trap near Bell house (rest of covey flushed from weeds nearby).

1) Immature ♂, banded # 56633
2) Immature ♀, " 56635
3) Adult ♂, " 56636

California Quail

Dec. 4 Hastings Reservation, Monterey County.

4) Imm. ♂, banded # 56637
5) Ad. ♀, " 56638
6) Imm. ♂ " 56639
7) Imm ♀ " 56640
8) Imm ♂ " 56641
9) Imm ♂ " 56642
10) Ad. ♀ " 56643

Total 3 adults to 7 immatures
Adults: 2 ♀, 1 ♂. Imm. 5 ♂ 2 ♀.

In every case except the last ♀, as each bird was released it defecated in flight immediately after taking off. The last adult ♀ seemed to be more wild, remained longer in the trap, and made only a very short flight, compared to the others.

1645 Took 3 quail in the new trap on flat above Davis house - one forced his way out where entrance funnel was insecurely fastened; the others were:

11) Imm. ♀, banded 56644.
12) Imm. ♀, banded 56645. at 1655 took 3 more in the small trap at base of Ceanothus in "Quail Hollow" - others seen nearby at this time.
13) Ad. ♂; banded 56646
14) Ad. ♂, banded 56647

California Quail

Dec. 4. Hastings Reservation, Monterey County.

15) Imm. ♂ 56641 - Recapture #1.

While banding these birds, the whole covey, apparently, flew from the adjacent chamise-covered hillside into the grump of oak trees in this area where they are apparently roosting tonight. I predict good success in the morning for the new trap.

All quail taken today appeared to be fully grown, with no indication of molt still in progress. These are all older, then, than the August brood observed in Berkeley, which were still growing #7 primary when last checked 2 days ago.

Dec. 5. Hastings Reservation, Monterey County.

0830 Ten quail in the trap at the base of Ceanothus in Quail Hollow. One escaped through the entrance tunnel, and one (already banded) by the exit door as I was removing other birds. Following eight captured:

16) Imm. ♀, banded 56630
17) Imm ♀, banded 56648
18) Ad. ♂, 56647 - recapture #1.
19) Ad. ♀, banded 56649. This

California Quail

Dec. 5. Hastings Reservation, Monterey Co.

bird appeared to be completely exhausted or in a state of shock from efforts to escape. I released her after banding by placing her on the ground where she remained crouching for a full minute, and even swayed to the side once. After I touched her again, and could have grasped her, she finally ran a few steps then took flight into the chamise brush. Flight seemed normally strong but terminated after a short distance.

20) Imm. ♀, banded 56650.
21) Imm. ♀, " 56651.
22) Imm ♂, " 56652.
23) Imm ♀, " 56653.

The remainder of the covey was seen in the surrounding chamise and ceanothus brush. No birds or sign of use at other traps in the HQ area.

Birds banded so far total: 21 -
Adults: 3 ♂ + 3 ♀ = 6.
Immatures: 6 ♂ + 9 ♀ = 15.

1355. Eighteen quail in trap B-1 (south of Bell house). The following were recaptures:

California Quail.

Dec. 5. Hastings Reservation, Monterey County

24-27) Imm. ♀♀ 56650, 56640, 56651, 56645.
28-29) Imm ♂♂ 56639, 56642
30-31) Adult ♀♀ 56638, 56643.
32) Adult ♂ 56646.

Nine new captures were banded:

33) Adult ♀, banded 56654.
34) Imm ♀, " 56655.
35) Imm ♀, " 56656
36) Imm ♀, " 56657
37) Imm ♂, " 56658
38) Imm ♀, " 56659
39) Imm ♀, " 56660
40) Imm ♀, " 56661
41) Imm ♀, " 56662.

Total banded population now 30:
Adults: 3 ♂ 4 ♀, Imm.: 7 ♂ 16 ♀.

Calculation of population size from "Lincoln Index" (ratios of banded birds caught) gives a population of 42:
Adults: 3 ♂ 5 ♀, Imm. 9 ♂ 25 ♀.

Small number of adults caught makes the calculation doubtful; disparity in sexes of the immatures suggests differential trappability. Compare these figures with the recent count of 21 ♂♂ - 28 ♀♀.

California Quail

Dec. 6. Hastings Reservation, Monterey County.
0750. Took 1 imm. ♀ in upper Quail Hollow trap, banded 56663. (42)
1635. Took 8 quail in trap D, on flat above Davis house, 5 recaptures:
43,44) Imm. ♀ - 56661, 56630
45) Imm. ♂ - 56641.
46,47) Ad. ♂ - 56636, 56647.
Three new captures, as follows:
48) Ad. ♀, banded 56664.
49) Imm. ♂, " 56665.
50) Imm ♂, " 56666.
1645. Three quail in trap C, in upper quail hollow, 2 recaptures:
51) Imm. ♀, 56651
52) Ad. ♀, 56649
53) Imm. ♂, banded 56667.
Banded population now composed of:
3 Ad. ♂, 10 Imm. ♂, 5 Ad. ♀, 17 imm ♀, total 35. Total population by Lincoln index calculation 49.

Dec. 11. Strawberry Canyon, Alameda County
0820. Birds in the Behavior Lab pen were along SE fence and under brush cover in E-10; they nearly all flew when I entered the pen, in contrast to previous tendency to run along the fence. Rough count of 14 birds.

California Quail

Dec. 11. Strawberry Canyon, Alameda County.
0830. In walking around the nearby areas to pre-bait for future trapping, I neither saw nor heard any sign of quail whatever. In the pen again at 0845, all quail were completely out of sight in brush cover; suggests that cold gusty winds keep them out of the open. The sun is also so low still that over half the area of the pen is still in shadow. Ended observations at 0900.

Dec. 13. Strawberry Canyon, Alameda County.
0845. Most of the quail in the Behavior Lab pen along the fence in A-10 and B-10; when I entered the pen to add grain they all flew directly to E-10 to the brush pile in that corner. All grain previously spread had been eaten. 0900 Flushed a covey of quail outside the Behavior Lab, near road south of west gate, about 40 birds that flew into the large patch of Baccharis in that area. No action in the pen from 0945 to 1000 when I entered and disturbed them, counting 14 birds — 13 in E-10 corner, one hidden in grass nearby.

W. J. Francis
1963

California Quail

Dec. 19. Strawberry Canyon, Alameda Co.

0930 Flushed one quail near the pen in the Behavior Lab; no others seen or heard in checking trap area. 1007 One ♂ in the pen began feeding on grain in D-4. 1010 Two ♂♂ joined in feeding same area. From time to time heard a low call - a throaty two-syllable like the first part of "assembly" but cut off short. 1014. Birds left the area one flying, apparently startled by something. 1630. Took following 5 birds in the trap outside the Behavior Lab:

56668 - Adult ♂
56669 - Adult ♂
56670 - Adult ♀
56671 - Imm ♀
56672 - Adult ♂.

Dec. 20. Strawberry Canyon, Alameda County.

0915 Several quail along the entrance road just inside the Behavior Lab. west gate; one flew a few feet, the others only walked slowly down hill as I passed by within about 10 yards.
0940 Took one bird in the trap outside the Behavior Lab:

#56673 Imm ♀.

California Quail

Dec. 20. Strawberry Canyon, Alameda Co.

1515. Took 9 quail in the trap outside the Behavior Lab:

3 recaptures:	56671	Imm ♀
	56668	Ad. ♂
	56670	Ad ♀.
6 new birds:	56674	Imm ♂
	56675	Ad ♂
	56676	Ad ♂
	56677	Imm ♂
	56678	Imm ♀
	56679	Ad ♂

Dec. 21. Strawberry Canyon, Alameda Co.

1330. No quail in traps + none seen or heard in the area. Checked birds in the pen - count of 14.
1645 Flushed a small covey just outside the pen in the Behavior Lab.

Dec. 22. Strawberry Canyon, Alameda County.

1600 Took 11 quail in the trap outside the Behavior Lab.:

4 recaptures –	56674	Imm ♂
	56677	Imm ♂
	56668	Ad. ~~Imm ♀~~ ♂
	56678	Imm ♀.
7 new birds –	56680	Imm ♀
	56681	Imm ♂

California Quail

Dec. 22 Strawberry Canyon, Alameda County.

- 56682 Imm ♂
- 56683 Ad ♂
- 56684 Imm ♂
- 56685 Imm ♂
- 56686 Imm ♀.

Total banded this week so far: 19 -
Adults - 7 ♂ 1 ♀; Imm. - 6 ♂ 5 ♀
Computed population: $12 \times \frac{11}{4} = 33$.

Dec. 28. Hastings Reservation, Monterey County

0745 3 Quail in the trap between Bell house and the barn; recapture #56630 Imm. ♀; new #56687 Adult [redacted] ♀
#56688 Adult ♂.

For the first time there were quail and sparrows in the trap together.

0810. Shortly after releasing banded birds just outside the Davis house, a quail pursued by a large Cooper Hawk hit the fence around a garden plot, then flew into the bushes around the house with the hawk a few feet behind. I could not locate them in the bushes; magpies kept up a chatter for about five minutes in adjoining pine trees.

California Quail

Dec. 29. Hunter Liggett Military Reservation, Monterey County. Between 1100 and 1740 checked sex + age of quails bagged by hunters on the reservation, with following results: 19 hunters bagged one a nine quail, total of 79 birds,
Adults: 11 ♂♂, 12 ♀♀.
Immature: 31 ♂♂, 25 ♀♀
Ratio of 56 imm.: 23 adults = 2.43, or 71% immatures. Only 7 hunters bagged 6 or more birds, ave c. 4 birds.

Dec. 30. Hastings Reservation, Monterey County. In checking traps this morning saw no signs at all of quail, but additional bobcat (or house cat?) droppings near traps. Combination of cat + hawk predation seems to have scared this covey away for the time being.

Dec. 31. Strawberry Canyon, Alameda County. 1030 Count of 14 quail in the Behavior Lab. pen.

W. J. FRANCIS
MVZ, Berkeley

Species Accounts

California Quail
Lophortyx californicus

1964

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1964

California Quail

Jan. 10. Strawberry Canyon, Alameda co.

0840. Birds in the Behavior Lab. pen congregated in the sunshine in the NE corner (E-1). Covey count only 12, but birds were wild & flew readily so accurate count was impossible.

0900. Following birds in new trap:

Imm. ♀ - collected (L. Wolfe).
Imm. ♂ 56692 - Recap. (bagged)
Ad. ♂ 56693 - Recap. (")
Imm ♀ 56689 - Recap. (")
Imm ♀ 56678 - Recap. (")
Imm ♂ 18392 (")
Imm ♀ 18391 Released.
Ad ♀ 18390 (bagged)
Ad ♂ 18389 Released
Imm ♀ 18388 Released.

1610 Following birds in new trap:

Imm ♀ 18391 Recapture.
Imm ♂ 18387
Ad ♂ 18389 Recapture
Imm ♀ 18386
Imm ♀ 18385
Imm ♀ 56691 Recapture
Ad ♂ 18384
Imm ♀ 56699 Recapture. Lower mandible protruded 1/4 inch beyond upper — was normal after separating with a probe.
Ad. ♀ 56694 Recapture.

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1964

California Quail

Jan. 10. Strawberry Canyon, Alameda County.

The birds in this covey banded on this two-days trapping only, now total the following, by age & sex:

Adult ♂♂ - 7
Adult ♀♀ - 2
Imm. ♂♂ - 8
Imm. ♀♀ - 17 Total - 34

The above includes only those birds released in the covey area, & the figures will be used as a base for calculating population from later captures.

Total Dec.-Jan. captures are divided as follows, totalling - 51

Adult ♂♂ - 14
Adult ♀♀ - 3
Imm ♂♂ - 13
Imm ♀♀ - 21

Of these 7 were removed, leaving 44 Dec.-Jan. birds 10 of which were trapped in Dec. only & not recaptured in the Jan. 9-10 period, compared to 11 Dec. birds which were retrapped.

Jan. 11. Strawberry Canyon, Alameda County.

1035. Five birds in trap inside Behavior Lab.:

18383 Imm ♀. (Picture)
18382 Imm. ♂
18381 Imm ♀

California Quail

Jan. 11. Strawberry Canyon, Alameda County.

# 18380	Imm ♀.		
18379	Imm ♂		

1100. Following birds in new trap outside the Behavior Station:

18378	Imm. ♂		
18394	Imm ♂	Recapture.	*
56696	Imm ♀	Recapture.	*
56684	Imm ♂	Recapture.	*
56691	Imm ♀	Recapture.	*
56671	Imm ♀	Recapture.	*
56679	Ad. ♂	Recapture.	
56699	Imm ♀	Recapture.	*
56670	Ad ♀	Recapture.	*
18391	Imm ♀	Recapture	*
18393	Ad ♂	Recapture.	*
56697	Imm ♀	Recapture.	*

* Indicates birds in Jan. 9-10 banded segment. Calculated population remaining is $12/10 \times 34 = 41$ birds, in this covey only

Jan. 13. Strawberry Canyon, Alameda Co.

0825. Birds in the Behavior hab. pen flushed from the west corner (A-1) as I approached and flew to cover in the east corner (E-10) where they remained. A single bird flushed just outside the pen,

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California Quail

Jan. 13. Strawberry Canyon, Alameda County.

same location as the birds just inside the fence - presumably one of this family recently liberated. 0900 Spotted the wild covey in the grove of young eucalyptus just outside the west gate to the Behavior Station, fairly well hidden in the ground cover.

Jan. 14. Strawberry Canyon, Alameda Co.

0900 Counted 13 birds in the Behavior lab. pen - 12 hiding in east corner flushed as I approached, 1 other flushed later from the south corner. 0920 Several quail ran into Baccharis brush as I approached trap #2 to set and bait it.

1610. Following birds in trap # 2:

	18377	Imm	♂	
	18376	Imm	♂	
*	18398	Imm	♀	Recapture
*	18388	Imm	♀	Recapture
*	56671	Imm	♀	Recapture
*	18396	Imm	♀	Recapture
	18375	Adult	♀	
	56615	Imm	♀	Recapture
	18380	Imm	♀	Recapture

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1964.

California Quail

Jan. 14. Strawberry Canyon, Alameda County.

18374	Imm	♀	
*18389	ADULT	♂	Recapture
18373	Imm	♂	
*18391	Imm	♀	Recapture
18372	Imm	♂	

Jan. 15. Strawberry Canyon, Alameda County.
0825. As I approached trap #1 in the Behavior Lab., about 20-30 quail flushed from the area, inside the fence, and flew off downhill. Following birds were taken in this trap.

Recaptures:
18379 Imm ♂
18380 Imm ♀
*56696 Imm ♀
56615 Imm ♀ (This bird banded as a juvenile Aug. 24)
18375 Adult ♀
18376 Imm ♂
*18394 Imm. ♂
18383 Imm ♀

First captures:
18371 Imm ♀
18370 Imm ♀
18369 Imm ♂
18368 Ad ♂
18367 Ad ♂

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California Quail

Jan. 15. Strawberry Canyon, Alameda Co.

0855: Following birds taken in trap #2, in edge of Baccharis, outside Behav. Sta.:

Recaptures:	* 56669	Adult	♂
	* 56698	Adult	♂
	* 18389	Adult	♂
	* 56691	Imm.	♀
	* 56699	Imm.	♀
	56683	Adult	♂
	* 18384	Adult	♂
	* 18391	Imm	♀
	* 56670	Adult	♀
First captures:	18366	Imm	♀
	18365	Imm	♀
	18364	Imm	♀

Summary of Jan. 11-15 recaptures, based on 34 birds marked Jan. 9-10.

Marked recaptured - 17
Unmarked - 23
Population estimate: $34 \times \frac{40}{17} = 80$.

Total marked (Jan. 9-15) population for future calculation.

Adults: ♂♂ - 11 ♀♀ - 3
Imm.: ♂♂ - 16 ♀♀ - 27
Total: 57 - 71% of est. population.

Plus 30 birds banded prior to Jan. 9, 1964, and not recaptured in this trapping cycle.

California Quail

Jan. 16, Strawberry Canyon, Alameda County.

0910 Following birds in trap #1, inside the west gate of the Behavior Station:

✓ 18377 Imm ♂ Recapture.
✓ 18380 Imm ♀ Recapture.
✓ 18368 Ad. ♂ Recapture.
✓ 18379 Imm ♂ Recapture.
✓ 18363 Imm ♂ New.
✓ 18369 Imm ♂ Recapture.

1010 Checked birds in the pen - good count of 13. The birds stayed very close to cover in the east corner; 8 ran out when I was 40' away, the other 5 not until I came within less than 20 feet. No birds seen or heard outside the pen.

1615. Following birds in trap #2:

✓ 18382 Imm ♂ Recapt.
✓ 18381 Imm ♀ "
✓ 18374 Imm ♀ "
✓ 18383 Imm ♀ "
✓ 18370 Imm ♀ "
✓ 18362 Adult ♂ New
✓ 56624 Adult ♂ Recapture.
✓ 56615 Imm ♀ "
✓ 18372 Imm ♂ "
✓ 56696 Imm ♀ "
✓ 18363 Imm ♂ "
✓ 18394 Imm ♂ "

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California Quail

Jan. 17. Strawberry Canyon, Alameda Co

0840. Following birds in trap # 1:

✓ 18369 Imm ♂ Recapt.
✓ 18372 Imm ♂ "
✓ 18379 Imm ♂ "
✓ ~~18369~~ ?? Adult ♂ " 56669?
✓ 18361 Imm ♂ New
✓ 56602 Adult ♂ Recapt.
✓ 18383 Imm ♀ Recapt.
✓ 18380 Imm ♀ "
✓ 18376 Imm ♂ "
✓ 18367 Ad ♂ "

0915. On approaching trap #2, I saw several quail feeding in the vicinity, so withdrew temporarily to permit a few more to enter the trap.

0930. Took following birds in trap # 2:

✓ 18360 Imm ♀ New
✓ 18365 Imm ♀ Recapture
✓ 18400 Imm ♀ "
✓ 18364 Imm ♀ "
✓ 18398 Imm ♀ "
✓ 56685 Imm ♂ "
✓ 56695 Imm ♀ "
✓ 56670 Ad. ♀ "
✓ 56699 Imm ♀ "
✓ 56674 Imm ♂ "
✓ 18389 Ad. ♂ "
✓ 56683 Ad. ♂ "

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California Quail

Jan. 17. Strawberry Canyon, Alameda County

✓ 18396 Imm ♀. Recapture
✓ 18388 Imm ♀ "
✓ 56691 Imm. ♀ "
✓ 18395 Imm ♂ "
✓ 18359 Imm ♂ New
✓ 18373 Imm ♂ Recapture
✓ 56698 Ad. ♂ "

Population estimate by recaptures:
Total banded (Jan. 9-15) : 57
New captures : 7
Recaptures of banded : 33
Estimated total birds : 69

1610. Following birds in trap #2:

✓ 18388 Imm ♀
✓ 18398 Imm ♀
✓ 18396 Imm ♀
✓ 18385 Imm ♀
✓ 18364 Imm ♀
✓ 18358 Imm ♀ - New
✓ 18395 Imm ♂
✓ 18357 Imm ♂ - New
✓ 18356 Imm ♂ - New
✓ 18391 Imm ♀
✓ 56698 Adult ♂
✓ 56691 Imm ♀
✓ 56690 Imm ♂
✓ 56677 Imm ♂
✓ 56686 Imm ♀

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California Quail

Jan. 17. Strawberry Canyon, Alameda County.

✓ 56674 Imm. ♂
✓ 56699 Imm ♀
✓ 56682 Imm ♂
✓ 56695 Imm ♀
✓ 56669 Adult ♂

This ends the intensive trapping program in this area which began Jan. 9 in which 67 birds were captured and released, 7 others removed, or a total of 74.

Total banded (Jan. 9-15)	57
New captures	11
Banded recaptures	39
Estimated population	73
Total captured - 68 or	93%

Jan. 19. Strawberry Canyon, Alameda County.

1310. Within 5 minutes after putting out feed in the Behavior hab. pen, 9 quail came out to feed (5♂-4♀) followed in one minute by the remaining 4 birds. All fed rapidly as if quite hungry; previous feed was all gone. 1315: the feeding birds ran off a little, then 8 disappeared in cover, 5 returned to continue feeding; 1317 another bird left & those remaining identified

California Quail

Jan. 19. Strawberry Canyon, Alameda Co.

as ♀♀ Yellow + Black, ♂♂ Red and Orange. 1318 All birds returned to cover, much grain remained uneaten at this time. 1323 On leaving the station saw a covey of about 20 on the entrance road which ran off in a very compact bunch down the fire trail parallel to Grizzly Peak Blvd., showing little excitement. This may be the covey usually around trap #1.

Jan. 22. Strawberry Canyon, Alameda County.

0930 Checked birds in Behavior hab. pen by flushing them out of brush in east corner (E-10). One ♀ did not flush until I moved the brush — then ran out + attempted to fly using only the right wing, the left remaining folded. She alternating running with flying attempts the carried her only a few feet — except for the left wing appeared to be strong. Counted 13 birds in all.

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California Quail

Jan. 23, McMillan Ranch, San Luis Obispo County 1700. Took the following birds in the trap set in back of the ranch house; banded them as listed:

	Adult ♂	Imm ♂	Adult ♀	Imm ♀
	18305	18304	18310	18302
	18314	18306	18316	18303
	18315	18307	18324	18308
	18318	18309	18326	18321
	18320	18311	18335	18323
	18328	18312		18325
	18330	18313		18333
	18331	18317		18338
	18332	18319		18342
	18334	18322		
	18337	18327		
	18339	18329		
	18340	18336		
		18341		
Total:	13	14	5	9

On the first bird (18302) taken, I noted two hippoboscid flies, one flew as I handled her, the other burrowed into feathers, then flew as I searched for it. Sample above may not be representative, since 400 birds or more were clustered around

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California Quail

Jan. 23. McMillan Ranch, San Luis Obispo Co.

and near the trap, so that only the leaders (more aggressive members?) of the feeding quail were able to get in the trap through the funnel entrance just wide enough for 1 bird.

Jan. 24. McMillan Ranch, San Luis Obispo Co.

0830. Took one bird in large trap near old granary - Adult ♀, #18401; and 2 cripples in cistern in quail brush enclosure - Adult ♂ #18402, and Adult ♂ #18403. Designated Catch #2.
1530. 45 birds in 4 successive trap loads (catch #3) in back of the ranch house. Recaptures Imm ♂ 18307, Imm ♀♀ 18333, 18321.
First captures, banded as follows:

Adult ♂	Imm ♂	Adult ♀	Imm ♀
18343	18350	18346	18354
18344	18404	18347	18355
18345	18411	18352	18406
18348	18415	18301	18407
18349	18418	18413	18409
18351	18419	18417	18421
18353	18420	18423	18422
18405	18427	18425	18424
18408		18429	18428

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California Quail

Jan. 24. McMillan Ranch, San Luis Obispo Co.

Adult ♂	—	—	Imm ♀
18410			18431.
18412			
18414			
18416			
18426			
18430			

Sub-totals catch # 3: (Newly banded).

15	8	9	10

Sub-totals previous catches:

15	14	6	9

Total so far:

30	22	15	19

1615. 7 Birds in large trap next to old granary cistern - Catch # 4:

	18433	18436	18432	18435
	18434	18438		
	18437			
Sub-tot.	3	2	1	1
TOTAL	33	24	16	20

Calculated size of ranch covey - 615.

Jan. 25. McMillan Ranch, San Luis Obispo Co.

0845. Serviced trap in back of ranch house, took 22 birds including 3 recaptures*. (This trap had to be rebaited in the morning, since rodents had cleaned up last nights grain)

Population Calculations
House Covey.

Banded (catch #1)	41
Banded recaptured	6
New - catch #3	42
New - catch #5	19
Total captures	67

$$\text{Pop.} = \frac{67}{6} \times 41 = 458$$

Banded (catch #1)	41
Recaptured (catch 3)	3
New (catch 3)	42
Total New	45

$$\text{Pop} = \frac{45}{3} \times 41 = 615$$

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California Quail

Jan. 25. McMillan Ranch, San Luis Obispo Co.

Birds taken in catch # 5:

Adult ♂	Imm. ♂	Adult ♀	Imm ♀
18441	18309*	18440	18439
18457	18443	18444	18442
18332*	18447	18446	18445
	18322*	18448	18451
	18454	18449	18452
	18455	18450	
		18453	
		18456	
Totals: 3	6	8	5

Calculated population: $\frac{22}{3} \times 83$ = 609 (Ranch Covey)

Total catch by age + sex groups:

~~36 30 24 25~~

112 : 35 28 24 25

0930 Checked traps at old granary: recaptured Ad. ♂ 18433 in trap in cistern; Ad ♂ 18402 by hand, no change in total banded.

1625 Took 5 birds in trap at the old granary, catch # 7.

Imm. ♂ - 18458

Ad. ♀♀ - 18459 - 18462

Imm. ♀♀ - 18460 - 18461.

Removed crippled ♂ 18403 from cistern and released it outside.

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Jan. 27. Strawberry Canyon, Alameda Co.

0920. Checked the birds in the Behavior Lab. pen. They stayed rather close until I approached, then ran up the NE fence from E-10 (11 birds) followed by a single ♀; then, when I was within 8 feet of the corner, the 13th (♀) ran out & alternately ran & flew (apparently normal flight) along the SE fence.

Feb. 2. Strawberry Canyon, Alameda County.

1310 Flushed covey from corner brush pile E-10 in Behavior Lab. pen, and counted 13 birds. One ♂ failed to flush until I moved the brush, then flew along SE fence, while others had run up along NE fence.

Feb. 10. Strawberry Canyon, Alameda Co.

1515 Two birds in trap inside the Behavior Lab. pen. Imm. ♀ unbanded wt 169 gms., released outside. Adult ♀ Yellow, returned to the pen.

Feb. 11. Strawberry Canyon, Alameda Co.

0830 Yellow ♀ and Lt. Green ♂ in the trap inside the pen; left in the pen.

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Feb. 13. Strawberry Canyon, Alameda County.

0920 Quail in the Behavior lab pen congregated in a single brush, retreated to cover in E-10 when I entered to service traps.

Feb. 16. Strawberry Canyon Alameda Co.

1700. Birds in the Behavior lab pen were moving about restlessly in E-10 as I came in to service the traps. Several perched 2 feet above ground on the brush pile in that corner, and low "talking" calls were given frequently. "Assembly" calls were heard, apparently from outside the pen.

Feb. 17. Strawberry Canyon, Alameda County.

0910 Three birds in the trap in the Behavior Lab. pen, sitting quietly on the ground and separated. One escaped via the entrance funnel as I began removing them. The others were:

Yellow ♀, wt. 175 gms. Returned to pen.
Unmarked ♂, wt. 194 gm. This is the last of the birds in the pen of the June 1963 brood. Removed to cage for the Ent. & Paras. study.

California Quail

Feb. 18. Strawberry Canyon, Alameda Co.

1800 Trapped an immature ♀ without a band inside the Behavior lab pen. Wt. 173 gms. This bird is unidentified & must have lost a band, unless I have been miscounting all year! Placed her in the cage inside the hut pending further captures, banded #18463 Saw 4 quail just outside the pen which might have been two pairs, or the last of a covey in the roadside brush.

Feb. 19. Returned ♀ 18463 to the pen at 0850, having counted 10 other birds in the pen - this must be one which lost a band

1730 Captured adult ♀ Black in the trap in the pen wt. 174 gms. Placed in cage in the hut with a little grain. Heard an assembly call nearby, but outside the pen.

Feb. 20. 0910 Removed black band from captured ♀, rebanded #18464; Took ♂ 56628 in trap, wt. 169 gms. added black band & returned to pen.

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Feb. 20. Strawberry Canyon, Alameda County.

Removed captive ♀ 18464 to Dept. of Ent. & Para. for experiment.

Feb. 21. 0850 Two birds flew from A-1 as I approached the Behavior Lab. pen; one bird flushed outside the pen & three birds just across the fence in area A-3. This is the first time the birds have not been bunched & may indicate that pair formation has begun. No birds in the trap.

Feb. 22. 1030 Nine quail in the pen bunched together, flushed a single ♀ near the fence in D-1.

Feb. 23. 1200 All 10 quail in the pen bunched in E-10 corner.

Feb. 25. 1210. Took the following birds in the trap inside the Behavior Lab. pen. Orange-56629 ♀, wt. 178 gms. placed in cage. Green ♂ wt. 196 gms. Removed green band & banded # 18465; placed in cage. Imm ♀ 18463, wt. 172 gms. Banded Green, returned to the pen. Light Green ♂, wt 186 gms.,

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Feb. 2~~5~~. Strawberry Canyon, Alameda County.

returned to the pen. Black ♂, wt. 174 gms., returned to pen. Yellow ♀, wt 165 gms., returned to pen. Four remaining birds in the pen, 2 ♂♂ together in E-10, 2 ♀♀ together in A-1. Population in the enclosure comprises:

3d Year ♂-Orange ♀-56605
2d Year ♂-Red ♀-Yellow
~~[illegible]~~ 1st Year ♂♂ Light Green, Black
♀♀ Green, (Pink or Blue).

Feb. 27. Wildcat Canyon, Contra Costa County

0920 A covey of 25 or more feeding at the edge of the Tilden Park playing field, near spruce entrance. Closely bunched together, often within a 10 ft. diameter, and feeding busily with heads down — no indication of pairing, no "guard" keeping lookout. Counted 28 birds from closer position, then birds retreated into brushy canyon.

0940. While climbing hill to the east, heard assembly calls from down the canyon, probably the same covey.

1050 In canyon where first covey was seen, I saw scattered birds walking through the underbrush, apparently to covey headquarters in dense poison-oak thicket.

California Quail

Feb. 27. Wildcat Canyon, Contra Costa County.
As before, no birds were in pairs, no sign of breeding behavior. No birds were seen or heard in the upper reaches of the canyon.

March 2. Strawberry Canyon Alameda County.
0930 Quail in the Behavior Lab. pen remained under cover, in brush in E-10 during observation period from the time I finished servicing at 0930. No movements observed up till close of observations at 1000. I then flushed the group, who left cover only when I came quite close. counted all eight. One ♀ fluttered near the ground as if unable to fly properly.

March 4. 1050 3 quail were running along the SE fence, separate from the other 5.

1553 Left Berkeley for Hastings, mileage 51792, and arrived, after stopping in Gilroy to replace gasoline filter, at Hastings Natural History Reservation at 1930, mileage 51934. Established quarters in the old bunkhouse.

see Journal.

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March 5. Hastings Reservation, Monterey County

1120. In the second canyon to the left up the creek, heard many low notes typical of a covey in the brush on the SE facing chaparral slope, near the creek bed. No response to artificial quail call. 1135 About 100 feet further down the canyon saw several quail retreating into the chaparral. 1202, probably the same covey, 11 birds counted, crossed the grassy flat near the juncture of the two canyons and ran up toward the oak woodland on the south side. No tendency to pairing noted - generally ♂♂ were in groups slightly separated from ♀♀, 3 or 4 to a group, some singles. 1227. Covey of 18 birds feeding on lawn directly in front of Bell house, closely grouped, no pairing or antagonism. 5-6 other birds between here and the creek bed. 1232 Four birds flushed from creek bed + flew to shrub at the edge of hillside woodland; 21 birds counted on lawn for minimum total of 25 in this covey. 1545. 3, then 5 more, quail flushed from the hillside as I was re-baiting trap south of the Bell house, and flew down toward the creek bed.

California Quail

1605. 5 or 6 quail ran from the base of a large chamise at the edge of the clearing with weather instruments down hill into the chamise thicket.

March 6. Cammatti Canyon, San Luis Obispo County. 1300 Flushed one definite pair and another probable pair from creek bed in the side canyon beyond the eagle's nest pine, No sign of a covey near, indicating probable pairing. 1355. McMillan Ranch. A pair walking up the road near the ranch house, two pair feeding together, and about a dozen near bushes with no apparent pairing. 1417. Flushed a single bird from the north hillside just above Old House. 1448 Flushed a single ♂ driving the car along the brush row in the "Trees" area.
1455 Flushed the whole covey in the same area, well over 100 birds. 1500 Another single ♂ in low bushes near the gully, 1502 Two birds from one brush near gully, then 4 birds across the gully. 1507 Single ♂ in brush on south side of gully, then another (♀?) from a spot a few feet distant. 1517. A single from the edge of the gully, may be a repeat.

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March 6. McMillan Ranch, San Luis Obispo County

1540. Flushed a bunch of birds in trees at the edge of the gully by the old adobe ruins. In walking about afterwards, saw about 6 run over the ridge to the north, 2 flushed together from the gully edge. 1545. Two Barn Owls flushed from a large sycamore west of the adobe, then a large covey of over a hundred from the small enclosed brush patch behind the ruins. Many assembly calls heard after this. 1600. A pair in the road by the old granary, numerous other birds scattered over the area, more coming from the brush enclosure. 1602 A pair returning along the road toward the granary - most birds have disappeared in cover without sign of alarm. 1604 Another pair, same direction. 1607. A pair crossed the road + ran up along fence toward the old house; met another pair and passed with neither taking notice. Quail visible in the enclosure around the cistern, many assembly calls, and some quail feeding along toward the old house. 1610. 3 more pairs crossed to old house. Other birds foraging near the gully did not come closer.

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California Quail

March 6. McMillan Ranch, San Luis Obispo County.

1625. With wind increasing & becoming gusty, and sky darkening with Cb as another shower passed close, a single ♂, then a pair, flew back across the gully, then 3 more birds ran down toward the gully. 1627. 3 more pairs moving up to old house. 1635. 4 pairs plus a ♂ and a ♀ separately crossed over; one of the previous males made a very tentative chase - ran a few steps toward another ♂ near his female and the second ♂ retreated a couple of feet. 1637 Another pair crossed over, and a pair returned direct from old house toward the gully. (Birds coming from the gully have all followed the fence & crossed over by the cattle guard 10 yards above the house). For the next 10 minutes all quail in sight moved very little, and mostly sheltering under and behind shrubs, although local weather has not changed - windy & dark sky as before. 1650 Three pairs suddenly ~~ran~~ ran to the bushy locust tree near the fence, and walked under it; none flew up into it to roost. 1655 7 pairs coming down the slope from

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March 26. McMillan Ranch, San Luis Obispo County
the brush enclosure, no unpaired birds or mixed groups yet. 1701 The main body of birds are leaving the brush enclosure + heading to the gully; pairs are obscured by the numbers: about 60 birds together and several stragglers following. One clear antagonistic encounter: first I heard the combative squill, then two males faced each other in erect posture + a short cockfight followed; then one chased the other a few feet. Up to 1730, with skies gradually clearing, 157 birds crossed over to the old house. Those around the house continued foraging rather than going into the roost. Summary of this whole covey: 44 obviously mated pairs, 97 birds either bunched or singles, total 185 birds. Of the identified single birds, 20 were ♂♂ and 16 ♀♀. The 28 birds crossing along the fence before 1700 were probably those with strongly developed pair bonds, since they remained separate both from the main covey, but generally from each other until going to cover.

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March 8. Strawberry Canyon, Alameda County

1720. Quail in the Behavior Lab. pen were all (or most) around the dry water hole as I drove up, but ran down to cover in E-10 corner as the car passed by. 1735 Two ♂♂, then two ♀♀ ran along fence to C-10, then scattered - several birds beginning to forage. 1740. Red ♂ and Green ♀ came up to feed in D-4; then Orange ♂ with an unidentified ♀ from E-3; finally all eight birds feeding in a compact bunch until startled (car on highway or plane overhead?) 1746. Light-Green ♂ and Blue ♀ ran up to feed, soon followed by all the rest. 1759. Seven birds feeding together, not paired - one ♂ came up, then left before last ♀ joined. 1807. All birds again feeding together.

March 10. 0955 Quail in the pen remained resting in cover for the last half hour, after I left the pen.

1725. In the Behavior Lab. pen a ♂ and a ♀ making short forays from brush pile in E-10. 1730 All birds moving around restlessly in the brush pile, 3 perched on horizontal branch 2' high.

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March 10. Strawberry Canyon, Alameda County.

1738 Two dogs passed just outside the pen & all quail hid in the brush. 1740. Two ♂♂ and Yellow ♀ walked along fence to C-10, another ♂ under E-9 roost. 1745. Red ♂ and Yellow ♀ feeding close together in C-10; and a ♀ perched on top of E-7 eucalyptus. 1749. At least 3 birds near the top of E-9 eucalyptus, flew up to E-3 & started to feed but ran back to the corner. A ♂ + ♀ of this group were perched with sides touching. 1755 Perhaps the same group - Ø5 ♀, Black ♂, and another ♂ fed briefly in C-3. 1800 No activity - ended observations.

March 12. From 0840 to 0910 all quail in the Behavior Lab. pen remained together under the brush in the E-10 corner. Much of the time individual birds were moving around restlessly, with occas'l individual forays a foot or so beyond the brush.

March 14. 1012 Six quail in A-10 corner of Behavior Lab. pen - 3 ♂♂ closer together, ♀♀ not seen until the birds flew to E-10 brush pile when I entered.

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March 14, Strawberry Canyon, Alameda Co.
1035. As I approached E-10 corner, 6 birds ran out, then another female — last bird not seen. As the birds scattered, they remained 4 or 5 to a group with 2-3 singles — none in pairs.

March 15. 1710 Began observations of quail in the pen at the Behavior Lab. 1718 Two pairs running along the fence in D-10 and E-10 — ♂ + ♀ of each pair staying fairly close + following the other partner. 1743. Sunshine has gone from the entire pen structure, still no activity from the quail. 1750 ♂ and ♀ feeding under E-9 eucalyptus. 1752 Three ♂♂ (Black, Lt-green, + Orange) began feeding on grain in D-3. 1755 Red ♂ and Yellow ♀ came up to E-2, then ran down the fence as another ♀ came to this area. 1757 3 ♂♂, 4 ♀♀ feeding in a close bunch in E-3. 1802 Group split up into 3 pairs (only Red-Yellow identified) and a lone ♀.

March 20. 1345 Heard several assembly calls in the vicinity of the Behavior Lab. pen, then saw a bird fly across the road from near the N. corner of the

California Quail

March 20. Strawberry Canyon, Alameda County

pen, and again heard assembly calls from this direction at 1410.

March 21. 1035 One quail flew from the west corner (A-1) as I approached the Behavior Lab. pen; 2 ♂♂ together in north corner (E-1) with a ♀ about 10' away from them. 1045 A single ♀ flushed from D-4 eucalyptus, then probably the same one from E-10 corner. Other birds not seen while in the pen. 1145. All 8 birds together in E-10 corner, after considerable disturbance by my presence; a pair had just flushed from ~~[illegible]~~ C-1 as I was cutting thistles 8 feet distant. 1815. Lt. Green ♂ feeding in D-4 for 2 minutes. 1827 One male in E-2, 2 others (incl. Red) in E-3. 1830. Red ♂ flew into D-4 roost, movements indicated several other birds there.

March 25. 1700. Several quail in the open in the Behavior Lab. pen, ran to cover as I approached. 1740 Several quail moving from E-10 corner toward center of pen. Red ♂ perched on dead weeds in E-6.

California Quail.

March 25. Strawberry Canyon, Alameda Co.

1743. Three ♂♂ and two ♀♀ feeding in a close group in D-4., joined after a moment by another ♂ and ♀; groupings not in ♂-♀ pairs. 1746. Birds took cover following motorcycle passing on the highway. No further activity until end of observation at 1820.

March 27. 1635 Flushed a ♂ and a ♀ from grass cover in A-10 while setting mouse traps - these two close together and separated from the others.

April 5. 1720 All eight birds in the Behavior Lab pen flushed from area B-6 when I entered to spread grain & check rain gage. One ♀ fluttered along the ground as if unable to fly. 1750 Several assembly calls heard, then saw one ♂ in E-5 who quickly ran out of sight. 1757 No further activity, with last sun-light now off the pen structure. 1806 All 8 birds feeding in E-2, then drifted into taller cover within 3 minutes. 1821 A ♂ & ♀ together in C-6, signs of other birds moving in tall grass; another ♀ joined the pair

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April 5. Strawberry Canyon, Alameda County
as they moved into D-4, then under the eucalyptus there when startled.

April 8. The quail in the behavior lab pen flushed several times due to the disturbance of the mower cutting grass. 4 birds together flushed from B-4, others flushed singly, most birds ending up in E-10 corner. A single ♀ flushed later from A-9, seemed to be quite unable to fly, and ran with fluttering wings - she appeared to be less able to use wings than when last seen.

April 9. Hastings Reservation, Monterey County.
0628 Two quail flushed from shrubs near Davis house + flew into oaks.
0653 Four pairs feeding on flat above Davis house; pairing apparently definite, but non-aggressive. Two ♂♂ feeding near one ♀ showed no interaction. Two pairs remained close to partners, other two wandered apart somewhat. Twice heard assembly call from nearby oaks. 0641. Heard quail fly into brush,

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April 9, Hastings Reservation, Monterey County.
while writing notes; no apparent disturbance.
0656 After circling through brush, where I heard some quail notes, saw the same (?) 4 pairs near the road. The majority of these were banded. At the same time heard assembly calls from the chamise hillside, showing more birds from a broken-up covey.

April 10. 0635. A small group of quail ran off through the edge of the brush as I walked along the path from White to Davis house - not much disturbed. 0945 Enroute Hunter Liggett saw two isolated pairs along the roadside, one just outside Greenfield, the other just inside HLMR boundary. Then near HQ area, saw a covey of about 25 quail foraging with no obvious pairing, and no antagonism between males. 1055 Two pairs near artesian well & cattle trough off Argyle Road - flushed twice as pairs; also a single bird flushed the second time. A single pair seen along Bear Trap loop, and a pair plus a single ♂ along the Jolon - Bradley road.

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April 10. Enroute McMillan Ranch, San Luis Obispo County. 1400. A single ♂ ran from cover around the guzzler near eagle-nest pine, in Camatti Canyon. 1407 A pair on hillside below eagle pine. 1700 No quail noted in the immediate vicinity of the McMillan ranch house, but around 200 scattered over the west pasture and adjacent hillside; about half in isolated pairs, the others bunched, but generally moving in pairs. 1705 Six pairs along the road above the ranch house & a covey of about 50 feeding across the gully below the old house; noted a definite cock fight, with squill calls followed by a chase. Pairing not very pronounced in the main body, but several pairs joined as I watched. 1713. A somewhat smaller & well scattered group around the old house - seven separate pairs above the road, about 20 scattered birds below the road, generally seemed to be paired; noted a chase by one ♂ of the ♂ of an adjacent pair. Crossing the hill to the north side of the ranch, I saw several pairs among the Atriplex bushes, then

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April 10. McMillan Ranch, San Luis Obispo Co.
a group of about 12 at the edge of the road, who ran off in pairs as I drove by. Then along the last stretch of Gillis Canyon Road, leaving the ranch, were 5 or 6 more pairs, and a covey of over 50 that flew south over the ridge; time 1730. No other birds along Gillis Canyon road until 1745 when a bunch of about 60 spread over both sides of the road near Ivor's windmill. Pairing not obvious.

April 11. Hastings Reservation, Monterey County.
0625 a small covey feeding in a fairly compact bunch up Quail Hollow - could not see all of them, only 5 or 6. Two ♂♂ engaged in a 'cock fight' and I heard a series of squill calls as I circled the brush trying for a better view. Quail disappeared into chamise before I got in position. 0645 Heard assembly calls by two birds & numerous low calls in brush below the water tank - this could be the same group, but I think it probably further than the others would have moved. 0748. An assembly call on the Quail Hollow side of the hill -

California Quail -

April 11. Hastings Reservation, Monterey County.
perhaps the covey is split. 0713. A single pair feeding near the path at edge of brushy hillside - assembly calls heard from several directions about this time.
Summary of quail sightings, this trip: Of 19 separate sightings, 8 were of isolated pairs (plus an additional ♂ in 2 cases); 1 single ♂ (with possibly a mate not sighted); 6 scattered groups with pairing more or less pronounced, including the large group of about 200 in McMillan's pasture comprising many pairs and several loose groups; and 4 fairly definite coveys, well bunched without pairing being evident when observed.

April 13 Strawberry Canyon, Alameda County.
1000 Birds in the Behavior bird pen were scattered in pairs along the fence in A-1 to A-10, and remained hidden in grass until I flushed them. One ♀ still unable to fly. An assembly call outside repeated several times, sometimes with only two notes and with emphasis approaching the "cow" call.

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April 13 Strawberry Canyon, Alameda County.
1010 to 1055 found no sign of quail in a tour of brush and fields to the north of Behavior Lab. - most likely birds are scattered out for nesting and remaining hidden. Laying may be generally under way in wild birds, doubtful in those in the pen. If so, expect hens to be incubating by May 1.
1800. As I approached the Behavior Lab. pen, 3 quail flushed from outside the fence by A-1, and 3 or 4 inside the pen flew from A-1 to the opposite side of the pen (including the ♀ with the crippled wing). 1817 Assembly calls outside the pen - often abbreviated to only two notes. 1820. Second bird heard calling outside the pen. 1823. A pair foraging in E-7, into D-7; ♂ retreated at motorcycle noise and ♀ (Green) went to D-4. 1825 A pair (Lt. Green ♂, Blue ♀) joined Green ♀ in D-4, and at 1827 all three ran into cover more or less together. (These are all first-year birds). 1829. A single ♂ in D-1 (perhaps responding to birds calling outside) ran rapidly along the fence toward the

California Quail

Apr. 13. Strawberry Canyon, Alameda County. east corner. 1832. Bird calling outside the pen twice gave a single note call, similar but not identical to the "Cow" call. 1840. An unidentified single ♂ exchanged squill calls twice with a bird just outside the fence, and seemed to attempt an attack through the fence; meanwhile Red ♂ and a ♀ foraged together in E-3. 1844. A pair coming up from D-10 another ♂ in grass in E-9. 1850 Red ♂ with Yellow ♀, another pair, and a ♂ with two ♀♀ in center clearing. Two ♀♀ in dust bath, a ♂ chased one ♀ away after he drank at the water hole. 1855 Birds in the clearing are two pairs, 2 other ♂♂, and one ♀; another ♀ appeared and birds are assorted loosely into four pairs. 1858. Birds still feeding in very dim light as I ended observations.

April 25. 1600. A pair in the dirt road west of Behavior Lab., ran & then flew. In the pen, 2 or 3 birds flew from about B-3 or D-4 as I approached. After servicing instruments saw about six in the

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April 25. Strawberry Canyon, Alameda County — E-10 corner, that ran off along the fence in a single group, ♂♂ together

April 26. 1909 3 birds flew from B-4 toward east corner as we approached the Behavior Lab. pen. 1929 a pair and two other ♂♂ began to forage near edge of clearing. 1935 3 pairs plus Orange ♂ feeding in center clearing, with a wild ♂ walking on top of the pen over them. Pairs well separated, not identified except Black ♂ with probably Green ♀. 1939 a pair along fence in E-6 with a wild ♂ just outside. 1941. Again saw Black ♂ with ♀ now identified as Green. Wild ♂ on top of pen right over them. 1945 Orange ♂ perched on instrument shelter & gave assembly call, 2 pairs feeding near; ident Blue ♀ and Lt. Green ♂ together, then Red ♂ with Yellow ♀. 1951 Black & Green drank at water hole. 1952 All birds, including ♂ on top, flew to east corner when startled.

April 29. 0957 Heard assembly calls outside the Behavior Lab. pen, then a quail flew over the pen & landed near the

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April 29. Strawberry Canyon, Alameda County.

fence opposite E-5, and a ♂ inside immediately ran to the vicinity. 0959 Heard assembly and Cow! calls outside, the first Cow! calls around here this year; as a pair came to E-5 feeding. 1001 This pair, identified as Red ♂, Yellow ♀, ran into weedy cover in E-6. Heard "Squill" call outside the pen. 1015 An unidentified ♀ running along the fence in E-7 with a ♂ outside the fence. 1025 Ended one-hour observation period with no further activity. 1040 Examined the periphery of the enclosure, and found no signs of nesting; most birds loafing in a group - the crippled hen separated from the others by 10-15 feet, and another hen flushed from D-1 several minutes after a group of six.

May 1. Behavior Lab. pen. Black ♂ in D-I near fence at 1255, another pair nearby in D-2. Black gave the impression of being a guard or lookout. When I entered, Black plus a ♀ hidden in the grass nearby flushed + flew to the east corner. No nesting sign in the fairly open grass where they had been.

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May 4. Strawberry Canyon, Alameda County.

1055. A pair flushed in the Behavior Lab. pen from along the fence in A-1 as I approached and immediately after a loud 'clear assembly call was heard, apparently inside the pen. 1110 While checking for nests, flushed two pairs from tall grass in A-10 - birds only moved when I came within a yard. No signs of nesting were discovered.

May 6. 1850 Quail in the Behavior Lab. pen did not flush when I entered to scatter feed + fill water hole. 1905 Orange ♂ perched on instrument shelter, 2 other ♂♂ plus a pair feeding in grass near the 'clearing'. 1907 Orange gave a series of 7 assembly calls, other birds out of sight. 1915 Black ♂ and Green ♀ feeding in E-3, another ♂ appeared, ran under eucalyptus. Then Red ♂ appeared from eucalyptus to center clearing; 1916 Orange ♂ left perch, as Red ♂ called from perch on a Cow weed in B1-5, then disappeared in the weeds. 1921 Orange ♂ again perched on instrument shelter, and calling; in less than one minute

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May 6. Strawberry Canyon, Alameda County.
he flew to the base of E-9 eucalyptus.
1925 Black-Green pair to center clearing, Black dust-bathed. 1928 Green in dust bath, where Black still remained. Another pair emerged from weed patch in D-8. Identified Blue ♀. 1931 Both pairs suddenly ran under D-4 eucalyptus.
1932 A ♂ came from the south corner, followed by a ♀. The ♂, Orange, flew up to instrument shelter, ♀ fed nearby & out of sight in back of it. 1935 A pair near fence in E-6, another pair in E-3. 1939 Φ5 ♀ joined Green-Black pair in E-3, then was joined by Orange & all fed together, 3rd pair still in E-6. 1942. With all birds under cover, ended observations, then entered the field. A ♂ (presumably Red) flushed from B-3; after a search of the vicinity, the crippled ♀, must be Yellow, flushed from thick grass when I came within a foot or so. However, no nest in this area, so apparently she is not incubating.

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May 13. Strawberry Canyon, Alameda County:
1005. In the Behavior Lab. pen, 2 pairs, including yellow ♀ who appeared to be hobbling somewhat, feeding in E2 and E3, another pair in E-5. 1010 All 8 birds moving into D5 and D6, pairs remaining separate, no antagonism between adjacent pairs. The birds gradually moved into taller grass where they were only occassionally sighted. 1025. Six birds flushed + flew to east corner (E-10) when I entered the pen for service work.

May 17. 1255 Birds in sight on arrival at Behavior Lab. pen were a male along fence in E-3, a pair in weed patch in E-5 and another pair along the fence also in E-4. I then entered the pen to add food + check rain gage, and flushed at least 7 birds from the brush in the east corner (E-10). 1330. Found an egg on the ground near the fence in A4, weight 9.3 gms. Very careful search within 20 feet or more failed to disclose a nest; also found an egg near the corner in E-1, weight 8.7 gms. This at least is evidence that the birds are

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May 17. Strawberry Canyon, Alameda County

in physiological laying condition, although the behavior this past week is not very indicative of a regular breeding season. 1350 Completed a round of the areas near the fence, flushing a female in B-10, no nest near; 2 ♀♀ flushed from brush in E-10 corner when I came within 10 feet, including the crippled one; found a 3rd egg on the ground in this corner, weight 8.7 gms; no nest located. Again flushed the birds, 4 ♂♂ together from E-1 and 3 ♀♀ separately ~~d~~ along the ~~..~~ NW fence line - all ♀♀ cared fly. Placed the 3 eggs ~~on~~ dried grass at the base of a grass clump in A2 (to see what happens). 1405 a further search of the enclosure discovered a nest with 14 eggs in area B-6, in a patch of thick grass about a foot high, with thickly growing forbs (no thistles) interspersed. Suggests thistles may be unacceptable nesting cover, since last years nests were all near the fence in areas which now have many thistles. 1417 Heard a series of assembly calls from outside the pen. 1435. Two pair ran to D-3 and began

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May 17. Strawberry Canyon, Alameda County.

feeding rapidly on grain there, soon joined by Red ♂, who after a minute moved alone to C-6 (near water hole). Identified first two ♀♀ as Green + Blue. Heard assembly + squill calls outside, then all birds ran to cover.

May 18. 0910. Nest in B-~~6~~ still with 14 eggs, not attended. 6-8 birds flushed from in back of eucalyptus in E-4, and flew to east corner.

May 19. 1210 as I approached the Behavior Lab. pen I heard assembly calls, a single "Cow!" call and a few squill calls, apparently from just outside the pen; no birds in sight in the pen, calls continued, with "Cow!" calls from one bird becoming predominant. Checked nest in B-6, still 14 eggs, unattended.

May 20. 0915 Nest in B-6 same as before, 14 eggs, unattended.
0933 "Cow!" calls heard nearby; no sign of birds inside the pen as yet.
0940. No birds have left cover in the last half-hour; discontinued observations.

California Quail

May 21. Strawberry Canyon, Alameda County.
0930 Nest in B-6 same as before, 14 eggs unattended. Removed all eggs and weighted, total 129.0 gms, ave. 9.2 gms each. Took these plus 3 previously found to LSB to test fertility by incubating; the ♀ must have abandoned this nest.

May 25. 0900 Heard assembly + squill calls as I entered pen, apparently from outside; a male flew off from a perch on top of the pen. 0905 While checking instruments, saw a male sitting on a low limb just outside of B-10, giving a long series of "Cow" calls. Birds inside remained largely in cover, saw 2 or 3 running along the fence. Dust bath showed signs of use.

May 26. 1410 Discovered nest in Behavior Lab pen, Area A-5, with 19 eggs, unattended. 1415 Another nest in area B-3, with 14 eggs also unattended. Hens may have been frightened off the nest as I approached, as I heard several alarm notes as I came up to the pen today. 1420. A third

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1964

California Quail

May 26. Strawberry Canyon, Alameda County
nest with 9 eggs, also unattended, in D-9. Several ♀♀, no ♂ noted, ran out from E-10 corner as I approached. The latter (D-9) nest was smaller than the others and the eggs were arranged assymetrically on one side, as if leaving room for more. Observed the pen from the hut until 1336 during which time no birds appeared. When I then opened the door into the pen, about 6 birds flew up from tall thick grass in A-8 & settled in A-10. Nests in A-5 and B-3 still unattended.

May 28. 1330 Checked nests in Behavior Lab. pen: B-3 still 14 eggs, unattended, may be abandoned; D-9 now has 11 eggs, 2 more than 2 days ago, still active; A-5 being incubated by ♀, which I did not disturb. 1401 Red ♂ came from E-5 into D-4, then flew to top of instrument shelter. after one minute flew down to E-3, then into weed cover.

May 30. 1855 Checked nests in Behavior Lab. pen. Female incubating nest in A-5, not disturbed. Female flushed from nest in D-9, before

[illegible]

W. J. Francis
1964

California Quail

May 30. Strawberry Canyon Alameda County.

I approached closer than 5-6 feet. This is the crippled female, believed to be Yellow. Nest in B-3 unattended, still 14 eggs, & apparently abandoned; a 15th egg not previously noted was found on the ground about a foot away. Two males ran along fence as we neared the E-10 corner. Returned to hut to observe at 1907. 1911. Soon after hearing an assembly call outside, a ♂ flew down from a eucalyptus and alighted on top of the pen. 1924. A ♂ came into view in A-5; stood for about 20 seconds 10 feet away from the nest, then ran into thick thistle patch. 1932. A pair came into view in C-6, drank at the water hole and fed in center clearing — identified as Green ♀, Black ♂ (both young birds). 1934 Another pair, Blue ♀ and Light Green ♂, came to center clearing from D-6 (also both young). Both retreated to cover by 1936. At 1944 heard a series of squill calls from a single bird outside of the pen. 1950. 3 Pairs

W. J. Francis
1964.

California Quail

May 30. Strawberry Canyon, Alameda Co.
not identified came out to feed, less than 1 minute, then ran back to cover as an emergency vehicle siren was heard. 1955. a ♂ outside landed on top of the pen, and ran to a position almost directly over the nest in A-5, where he remained 4 minutes. 2002, Lt. Green-Blue and Black-Green pairs came to feed in center clearing, then Red ♂ joined them; all soon ran into cover. 2007. Same 2 pairs + Red ♂ again in sight feeding. 2013 Black-Green pair feeding in D-4.

May 31. 1150 Checked nests in Behavior Lab. pen. No change except that ♀ in flushing from nest in D-9 apparently kicked one egg out of the nest. I replaced it, finding it still warm.

June 1. 1040 checked A-5 nest, ♀ incubating. Did not check D-9 nest in order to avoid disturbing the skittish hen there. While servicing instruments + cleaning

W. J. Francis
1964.

California Quail

June 1. Strawberry Canyon, Alameda County.
excess weeds I did not see any of the birds in the enclosure - probably all in the tall grass in the south quarter, where I did not go. Noted a remex on the ground near the instrument shelter - is this a sign of possible moulting? 1125 Ended 30 minutes of observation with no activity by quail and again entered the pen to check birds. Flushed 3 birds from south corner, found hens on nest in both A-5 and D-9 (approaching from below I did not flush the latter this time). The three other birds are unaccounted for.

June 5. 1630. Hen incubating nest in A-5, I did not approach D-9 nest. 1635 Blue + Lt. Green pair came to feed rapidly on grain in D-4 for about 2 minutes then walked to the edge of the dust bath, and suddenly flew into cover in E-9. 1645 Attempted unsuccessfully to catch ♀ on nest in A-5 by placing 2' × 3' trap over her on the nest. Due to thick vegetation and uneven ground, she was able to escape within seconds after

California Quail

June 5. Strawberry Canyon, Alameda County

leaving the nest, and before I could identify her - since I am certain she is #56605, she has only a well-worn aluminum band which is not very visible. 1659 Two ♂♂ and a ♀ came into D-4 and fed for one minute. One ♂ separate from the other pair flew to a perch on the instrument shelter - identified as Lt. Green. The ♀, prob. Blue, wandered off from the other ♂, then ran to E-8, where Lt. Green ♂ flew to join here. Other ♂ now seen to be Black ran under D-4 eucalyptus after another half a minute. 1703 A pair feeding in D-4, ran under eucalyptus before identified; almost immed. returned & ♂ ident as Orange. 1705 Red Yellow pair in E-3. 1706 A pair plus Black ♂ in the center clearing; pair drank at water hole, ♀ appeared to be ϕ5. 1708 Red ♂ plus a ♀ feeding in D-4. ♀ ident. as Yellow. 1712 Two more pairs came into the clearing where single ♀ ϕ5 was feeding. Orange ♂ joined up with ϕ5 ♀, and made a couple of threats

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1969.

California Quail.

June 5. Strawberry Canyon, Alameda Co.
with lowered head at the other ♀ which accompanied him to the clearing. the other pair went back into weedy cover. 1719 With two pairs in clearing an outside ♂ lit on top; both pairs ran back into weeds as Green ♀ came to water hole, then over to D-4. Saw Black ♂ behind eucalyptus in E-4 after she disappeared in that area. 1725. Reentered pen + checked nests - A-5 nest, hen still off; D-9 nest, hen had returned, + flushed from nest with me at a distance of 8 feet. She took cover in nearby corner E-10, + I identified her as Yellow - she is the cripple. Eggs in nest 13 as before. Left station at 1728.

June 8. McMillan Ranch, San Luis Obispo County. 1515 Set up and baited two quail traps, and took 24 birds in back of the ranch house by 1630. Collected 2 adult ♂♂ (one previously banded #18454) and two ♀♀. Banded the remainder, examined state of molt, and released them.

California Quail

June 8. McMillan Ranch, San Luis Obispo Co.

16 ♂♂ total; with 5th primary last molted #18470; one escaped unbanded (this bird with all rectrices missing); one collected, #18475; #18474. ♂♂ with 6th primary last molted: #18466; #18473; #18314; #18408; #18477; #18478. ♂♂ with 7th primary last molted: #18468; #18454 (collected); #18476; #18479. ♂ with 8th primary molted, #18339.

8 ♀♀ total; with 5th primary molted: #18467; #18469; ~~#18471;~~ two collected; ♀♀ with 6th primary molted: #18471; #18452; #18355. ♀ with 7th primary molted #18472.

Those underlined are birds previously banded. It was not possible to separate one year old birds from those older since the upper primary coverts were in some cases already replaced; in some molted without yet being replaced; in some apparently worn to the point of being indistinguishable.

2040. Took a male in the trap in front of house; #7 primary molted. Banded # ~~18480~~ 18480.

W. J. Francis
1964.

California Quail

June 9. McMillan Ranch, San Luis Obispo County

Between 0630 and 0720 saw an estimated 500-600 quail between the ranch house and the old house, in six coveys of 50 to 200 birds, plus a number of scattered stragglers, none of which appeared to be breeding pairs. 1310 Began observations in the vicinity of Marion Spring and Portugee Canyon. 1332 Two ♀♀ walked out of barley field across Marion Canyon to a pile of dead Juniper branches, joined after a moment by a male; then they all returned to the barley followed by 11 half-grown young, estimated to be 5 weeks old. A second ♂ then followed the group. No further birds seen here nor on a 1-hour walk down Marion Canyon, up Portugee Canyon, + back along barley field. 1600 (See journal for time corrections prior to this). Took 19 birds in the trap in front of the yard - these could be separated as to age, presumably, by the presence of one (only) mottled upper primary covert on some, with coverts present + no sign of molt on the others. One ♂ (imm., #6 prim.) and one ♀ (ad., #6 prim.)

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California Quail

June 9. McMillan Ranch, San Luis Obispo County.
were collected for dissection + liver analysis.
Following others trapped and banded,
with number showing last primary molted.

Ad. ♂, #6 – Band 18481
Ad. ♂, #5, " 18483
* Ad. ♂, #6, Banded 18337 last Jan.
Ad. ♂, #7, Band 18488
* Ad. ♂, #6, Banded 18331 last Jan.
Ad. ♂, #6, Band 18489
Ad. ♂, #7, " 18491
Imm. ♂ #6 Collected.
Imm. ♂ #7 Band. 18492
Ad ♀, #6 Collected.
Ad ♀, #5 Band 18485
Ad ♀, #6 " 18486
Ad ♀, #6 " 18487
* Imm ♀, #5 Banded 18409 last Jan.
Imm ♀, #6 Band 18482
Imm ♀, #7 " 18484
Imm. ♀, #6 " 18490
* Imm ♀, #6 Banded 18355 last Jan.
Imm ♀, #7 Band 18493.

1710 a rather scattered group of quail across the gully from the ranch house was noted to consist of at least 12 pairs which remained together while feeding, plus several scattered individuals which may have been paired or not.

California Quail

June 9. McMillan Ranch, San Luis Obispo County - 1930 to 2020 toured the ranch to observe quail. Large scattered covey at the old house going to roost, no evident pairs. None seen near the old granary or over the hill near the adobe ruins. At the west end of the ranch along this canyon, started a good-sized group from Atriplex hedge-rows. One ♂ was attending a chick estimated at 4 weeks; a small group consisted of about 4 evident pairs, possibly two more; a remainder of about 60 birds ran off in a single well-bunched covey.

June 10. 0850 Took 15 quail in the trap in front of ranch house, 13 of which could be classed as having immature or adult primary coverts, with two doubtful because of missing coverts; as before, no more than one covert was mottled in the immatures. Birds taken, and last primary molted, and band no. are as follows:

(?) Ad. ♂ 18494, #7
(?) Ad. ♂ 18499, #7
Ad ♂ not banded #7
Ad ♂ not banded #6
Ad. ♂ not banded #6.

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California Quail

June 10. McMillan Ranch, San Luis Obispo County.

	Imm. ♂	18500	#6
	Ad. ♀	18495	#6
	Ad. ♀	18497	#6
	Ad. ♀.	18498	#6
	Ad. ♀.	not banded	#6
*	Ad. ♀.	18452	#7
	Ad. ♀.	not banded	#6
*	Ad ♀.	18316	#5
	Imm. ♀	18496	#7
*	Imm ♀	18355	#6

* Birds previously banded.

June 11. Strawberry Canyon, Alameda Co. 0830. On approaching the Behavior Lab. pen, saw 4 quail feeding together in A-1; then noted one perched on the instrument shelter. Checked the nests in A-5 and D-9 and found both unattended with the eggs cold, apparently abandoned. Recent, cold rains may have been sufficient to overcome the reduced breeding urge apparent this spring.

California Quail.

June 13 Strawberry Canyon, Alameda County
1445. Checked nests in the Behavior hab. pen. Found hens incubating on both nests, A5 and D-9, although the eggs were cold two days ago.

July 26 Strawberry Canyon, Alameda Co.
1135. About 5 adults, only 4 young, moving along fence in C-10. 1130. One unaccompanied young bird ran across B-4 and A-4. 1143. 2 ♂♂ (Lt. Green, Red) 2 ♀♀ (Yellow, Green) to dust bath, followed by Black ♂ with one chick; returned to group in C-10 in less than 1 minute. A minimum of 7 chicks counted in this group. 1156 Two ♂♂, one ♀, one chick, feeding in D-6. 1157 Another ♀ joined group, then another pair. Identified Red, Black, & Green 1201. One pair left, 2 more chicks joined group. 1203 A 4th chick joined, then chicks ran off with Yellow ♀. 1208 I entered the pen to check nest sites & all 8 old birds flushed & flew together while young birds were not seen.

July 28. Observations of quail in the Behavior hab. pen 1840 to 1940:
1855 Three ♂♂, one ♀, and

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California Quail

July 28. Strawberry Canyon, Alameda County. about six young along the fence in C-10 and D-10. 1857 Red ♂ to center clearing. 1858 another ♂ and two young joined Red ♂ for a few seconds, then ran (young birds flew 15-20 feet) back to cover). 1906 Red ♂ and Yellow ♀ to center, followed by Lt. Green ♂ and Green ♀ - no young. 1908 these birds returned to cover, and Red ♂ again came to the center. 1930. Three ♂♂, two ♀♀, and one young in the center clearing, while Orange ♂ along the fence in C-10; these ♀♀ ident. as Green and Yellow. Note that Blue and 05 ♀♀ were not identified during this period.

July 30. While setting mouse-traps and cutting thistles in the Behavior Lab. pen the quail flushed and flew back and forth along the NE fence. at 1435 a young quail flew full tilt into the lower fence in E-10. I picked it up, and found no obvious broken bones, probably suffering mostly from shock. This bird weighed 45.0 grams. after sprinkling it with a little water, I placed it under a Baccharis shrub

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California Quail

July 30, Strawberry Canyon, ~~Alameda County~~.
in E-7 to see if it would recover.
1445 Found a young quail crouched in grass under a *Baccharis* in A-10, did not move until touched, then ran 15-20 feet & returned to A-10 corner.
1450. Checked injured young bird and found it now standing up, but not moving in the same location. Molt of tail feathers was very evident in one bird (adult) which flew when approached.
1506 Red ♂ (alone) to center clearing, eating grain. 1507 Green ♀ came from another part of the pen to join him.
1511 Both birds gradually foraged over to D-4 eucalyptus and went into its cover.
All birds then remained hidden until end of observation from the hut at 1525.
1945 Resumed observations. Many birds in central clearing as I approached, ran quickly to cover.

July 31. Wildcat Canyon, Contra Costa Co.
0815 Saw a ♂ with two chicks (4-5 weeks) along roadside. Nine other adults with no chicks were feeding in the vicinity. 0820 Near the golf course a group of 4 adults and ~~nine~~ ten chicks crossed the road — 1 chick larger than the

California Quail

July 31. Wildcat Canyon, Contra Costa County.
other ♀, which appeared to be 4 weeks old.

Strawberry Canyon, Alameda County.
0900 Eight adults and 5 chicks foraging in A-10 corner. While birds kept moving in corners and along fences, they did not come out into the open at all.

Aug. 3. Strawberry Canyon, Alameda County.
0940 Three ♂♂ and one ♀ patrolling the fence in A-10 and B-10, with another pair visible in the A-10 corner - some chicks possibly with this last pair. All birds soon became quiescent in this area until 1000 when I ended my observations from the hut. 1030 a search of the pen revealed a dead chick in E-7 next to the fence - very likely the one recently found injured. Body was too consumed with ants + maggots to determine any injuries. During the search flushed all eight adults, apparently - five in one bunch, - and 4 chicks who followed parents on the ground to A-1, then remained hidden when the adults flew until I approached and then flew the full length of the pen.

California Quail

Aug. 5. Wildcat Canyon Contra Costa County -
0900 Saw a somewhat scattered covey of 30-40 adults, with no young birds, at the "Little Farm" in Tilden Regional Park. Several drank at a seepage puddle, most were crossing the clearing, possibly returning from watering at the creek. Lou Testa (sp?) working in this area reported only 1/10 the number of young quail seen this year compared to last year - about 3 broods altogether seen by various people in this area.
0920. In the thick brush in the canyon bottom, near the playing field and "Creek Grove" picnic area, heard a series of clucks such as adults call their young with; probably one brood in this area. However, I also sighted a feral cat with two half-grown kittens. No water in the creek at this point. No other birds seen or heard in driving along Wildcat Canyon Road.
Strawberry Canyon, Alameda County.
1015 Flushed birds from E-10 corner while servicing traps. Five adults flew together, followed by a single ♀. then another ♀ ran up the fence followed by 4 young; a

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California Quail

Aug 5. Strawberry Canyon, Alameda Co.
fifth young bird flew in a circle, came back to the brush pile in the corner, and escaped through the corner gap, above the fine wire barrier which extends up 2½ feet from the ground. I removed brush from the corner so this route is no longer accessible.

Aug. 6. 0615 Birds flushed from area A-1 as I approached the Behavior hab. pen. 0630 One bird flew up into E-9 eucalyptus. 0640. Both adults + young foraging in E-10 and along SE fence. Activity decreased slowly until no birds at all in sight by 0710. 0715 Orange ♂ perched 2 feet high in brush pile in E-10, several chicks running around in this area. 0820 Birds flushed from E-10 corner when I entered the pen, only two young seen. In the area where I removed brush from the E-10 corner yesterday, I found 14 eggs in a crude nest, only a depression in the eucalyptus leaves - none were hatched! same

California Quail

Aug. 6. Strawberry Canyon, Alameda Co.
were crushed,

Aug. 7. 0940 Flushed birds from E-10 corner when I entered to service traps and hygrothermograph. The birds all all remaining together in a close-knit covey now, but count just 9 birds together with only 1 size young. Other sightings appeared to have about 3 young birds.

Aug 8. 0850. All birds in a bunch together, apparently about 3 young ones. Ensanita Lake Alpine: 0910 Saw 3 adults with 3 young (c. 4 weeks) crossing road just south of Grizzly Peak.

Aug. 12. 0852. All birds bunched in E-10 corner of the Behavior Lab. pen. I could distinguish 3 young birds in the group. 0905 Several birds moving away from the corner along the SE fence, but returned within 4 minutes. 0915 Two young birds preening side by side in E-10, with a ♂ adult standing nearby; as the male moved away, the young also moved, out of sight in the vegetation.

California Quail

Aug. 12. Strawberry Canyon, Alameda County.

0925. Adult ♂ perched on brush above area where two young were located, identified as Red. 0928. 4 ♂♂ and 2 ♀♀ together, other ♀♀ and young barely glimpsed in grass about 8 feet away; then the group congregated in and around the brush pile in E-10, one ♂ and one ♀ perched on a limb 1½ feet off the ground. These two birds preening, others just resting. 0940 Ended 1 hour observation from the hut, with one ♂ perched on brush, all other birds concealed. 1020 Flushed birds while working in the pen. All 8 adults flew together; one young bird flew after two minutes when I came within about one foot while cutting weeds.

Aug. 14. 0815 Eight adults and one young bird ran together from E-10 corner as I entered the Behavior lab. pen to service instruments. No further activity, left the station at 0835.

Aug. 16 1925 Eight adults and one young bird foraging in E-10 corner of the Behavior lab. pen. 1930. Definite sight of a second young bird. 1933. Two ♂♂ (Red, Lt.

California Quail

Aug. 16. Strawberry Canyon, Alameda County
Green) one ♀, and 2 young to dust bath and water hole. 1940 an adult pair with 3 young, feeding in a group in C-8, below the water hole. 1941. 8 adults + 3 young in center; feeding, dusting, and drinking. Identified ♂ with the 3 young as Orange. Family group ran off together, including a ♀ not identified. 1944. Red ♂ alone near hut in C-3 — indicates either no survivors of his brood, or he is failing to look after any survivors. 1952. Seven adults + 3 young in the center clearing — much shifting around of the adults. The three young dusted and foraged in the vicinity as the remaining adult (♂) perched in B-7 eucalyptus. 1955. One young remained in dust bath with Yellow ♀, the other two young running to cover. As Yellow + the young one ran toward E-8, the perched ♂ flew to the ground and ran rapidly toward this same area. Clucking could be heard from this area also. 2000. Birds going to roost in eucalyptus shrubs in D-4 and E-9 both.

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California Quail

Aug. 20. Strawberry Canyon, Alameda County.
1405. Three birds noted in brush pile in E-10 when I arrived at station; when I entered the pen at 1410 5 birds flew from the D-4 eucalyptus down to E-10; a few seconds later the crippled ♀ ran down from the same place.

Aug. 24. 0925 Quail in Behavior Lab. pen grouped in E-10 and running along the lower fence. Flushed in two groups of 7 and 4 when I entered the pen. 1707 Carmel Valley Road. Came upon a covey of quail along the road between grassy + brushy hills, and a flat pasture, below ranches along Tularcitos Creek. The birds ran into cover on both sides, with much calling and clucking, then many crossed the road again, most going toward the water. There were many young birds estimated to be a little over half those seen, nearly full size, but with black throat pattern incomplete in the young males; identification of the young females was uncertain.

California Quail

Aug. 24. Carmel Valley, Monterey County. The birds that crossed the road fed in stubble of the field until startled, when the flew into the brushy hillside, with again much calling. A group of about 4 or 5 in the roadside weeds flew rather weakly and may be younger (and appeared smaller) than the 9-10 weeks of most young. Estimate 50-60 birds in this covey.

Hastings Natural History Reservation, Monterey County. 1800 A covey of 19 quail feeding near the white house, with 8 others in the tall grass of the adjacent meadow. Of these 27 birds, at least 11 appeared to be young.

1930. Two pairs of adults foraging around the white house, then ran off down the road. 1945 No other quail seen in circling local headquarters area - a number of calls heard, particularly around oaks on hillside, indicating the birds have already gone to roost. Sun has disappeared behind western hills, but it is still quite light.

W. I. Francis
1964.

California Quail

Aug. 25. Hastings Reservation, Monterey Co.

0655. The local covey of quail feeding in front of Bell house; counted 13 adults and 9 young, the latter in two groups of 4, joined by another single one. Molt obvious in adults, one female completely tail-less. Adults drank from the drip around the valve of a fire hose outlet, walking up the sloping hose to reach it. 0706 Total of 26 birds counted, 10 young together, 9 nearly, then a ♂ came to feed with the young birds; main group, all or nearly all adults feeding 30 feet away from the group of young. 0710. A group of about 8 birds, including 2 young joined the group near the water valve. 0712 After a brief run to cover, birds scattered, and I counted 46; group of 10 young still together in the same place. These birds appear to be in strictly juvenile plumage, with no signs of adult plumage. One older bird with them was noted to have partial juvenile ♂ plumage (some mottled remiges, partial black throat), indicating there may be other older young.

California Quail

Aug. 25. Hastings Reservation, Monterey Co.

0721. Further inspection gave a count of 8 young birds in addition to the group of 10, for a total of 18 definite young! There are 20 adults without young that have remained together, the eight other birds being most probably parents of the young. 0725 Another adult pair appeared from the creek bed. 0728. The group of adults moved off beyond the Bell house, with 16 young + 8 adults remaining in front of the house. 0733 Adult ♀ with 2 or 3 young feeding on fig leaves around the water valve, + drinking water, while adult ♂ + 5 young feeding nearby. This ♀ shows a faint outline of ♂ throat pattern — not like the developing pattern of a young ♂ — suggesting either ovarian disease or hormone imbalance due to strain of raising young in a year like this. 0740 a group of 10, 4 adults and 6 young, came up from the gully, and are feeding beyond the Bell house. Probable total 24 young and 34 adult birds. Ended observations as most birds wandered out of sight.

California Quail

Aug. 25. Hastings Reservation, Monterey County.
1030. A group of 19, both adults + young, feeding in front of White house.
1032. A brood of 9 young emerged from fig bush to feed in front of Bell house, in company with an adult ♂, and the ♀ with traces of ♂ markings nearby
1045. Birds in front of White house began to wander off via the gully - saw one brood of 6 attended by an adult ♂, another of 3 with two adults nearby. These birds are the older young - about 9-10 weeks compared to the 6 weeks of the 9 seen in front of the Bell house.
1425. Carmel Valley Road At junction of Cachagua Road saw a group of 4 adults with 2 young.

Aug. 26. Hastings Reservation, Monterey Co.
0638. No quail feeding near Bell house as there were yesterday, with a Cooper (or large Sharp-shinned) hawk hunting in the immediate area. 0844 Greenfield Road below Paloma. A small covey of quail in farmyard, one pair with 4 to 6 young, about 8 other full-grown birds (some may be this years immatures, but no distinction could be made). 1150. McMillan Ranch, San Luis Obispo Co. Flushed about

California Quail

Aug. 26. McMillan Ranch, San Luis Obispo Co.
160 birds in quail brush near fence in front of ranch house - all appeared to be adult. Camatti Canyon 1620. A covey of 40-50 quail ran from around the guzzler up into brushy hillside as I drove up. Various calls heard from the hillside. These became fewer + more distant, only two distant assembly calls being heard from 1707 to 1719, when a bird was heard calling fairly closely, as well as one further off, distant call heard immediately after the closer call. Ended observations at 1722. McMillan Ranch 1900 to 1950 observed two groups of quail feeding and approaching roosts around the old house. One covey counted 43 birds accurately, the second estimated at 40, with about 10 others scattered. All birds are apparently full-grown adults with no young seen.

Aug. 27. Hunter Liggett Military Reservation, Monterey County. 0700 Saw 12 quail crossing creek in back of San Antonio Mission, apparently leaving roost in oak trees where one bird flushed.

California Quail

Aug. 27. Hunter Liggett M. R., Monterey County.
All birds were full grown adults, with no young seen. 0920 a covey of 30 adults, no young seen, feeding on grassy bank between MP hut and the barracks. When disturbed this covey flew into a nearby oak - in flight the molt appeared to be complete, with no ragged plumages noted. MP's in the game program report that there are many quail, young have been seen in 3 different age groups (one opinion that the quail have raised 3 broods).
1005 Disturbed a covey, probably the same bunch, all adults, at the mouth of the brushy canyons above the MP hut. About half these birds were in trees, and flushed birds in the open tended to fly into nearest trees, while birds in the brush would run on the ground.
1020 Returning to MP hut, found a covey of 19 feeding on the nearby flat - these are probably in addition to those seen up the canyon, who scattered in the brush. May be 40-50 birds in this locality, no young ones. 1030 A covey of 15 crossed the road from in front of the Hacienda, and foraged along the headquarters area fence.

W. J. Francis
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California Quail

Aug. 27. Hunter Liggett Military Reservation, Monterey County. 1207 A covey of 15-20 at guzzler "TP" off Argyle Road. 12 seen clearly as they ran up the hill were all adult. No further activity here up to 1237. Proceeded to check guzzler at "TOBlueF" – no quail or signs. 1300 At quail enclosure around natural seepage pool at "TORedN", flushed 40-50 quail, no young ones seen. No quail seen along the road on the Reservation; a total of about 150 adults were seen today, with no young birds, although there may have been a few young not identified as such in the last bunch flushed; a total of 20 unidentified young is the maximum possible estimate, zero is more probable.

Aug. 31. Strawberry Canyon, Alameda County. 1740. All birds in the Behavior Lab-pen came to center clearing to feed and drink about 5 minutes after I filled water hole + scattered grain. For the first time I could identify one of the 3 young as a ♂, the other two are ♀♀. Birds remained in a compact bunch, no pairing off,

California Quail.

Aug. 31. Strawberry Canyon, Alameda County.
the 3 young birds remaining together as they fed.

Sept. 4. Birds in the Behavior Lab. pen flushed + flew in several directions while I was working in the pen. A young bird flushed from A-4 as I was leaving + flew violently into the top of the pen + fell to the ground. When I approached he got to his feet + ran off slowly.

Sept. 7. 1012 Counted 10 birds in the Behavior Lab. pen, including 3 young. 1014. Five birds ran to center of pen to feed, Green ♀ and the 3 young remained feeding for several minutes. A second young can now be identified as ♂, but apparently several days behind the first one noted, first indication of survivors from two broods. 1015 Birds ran to cover when startled. 1023 Red ♂, Yellow ♀, and the older ♂ juvenile to feeding in the center, soon joined by the rest of the covey: 9 birds together, two ♀♀ noted near the fence in E-10. 1026. All birds

California Quail

Sept. 7. Strawberry Canyon, Alameda County - Ran to cover. Airplane noise overhead may be the disturbance this time -

Sept. 11. Wildcat Canyon, ~~Alameda~~ Contra Costa County.
0920 A small covey of about 12 birds crossed the road from the Golf Course to a eucalyptus grove - many saplings & widespread poison oak (Rhus) in this spot. 1000 About 8 quail feeding in the "Little Farm" and in the bushes next to the creek. Three appeared to be nearly grown juveniles in company with a pair of adults, with possibly another pair with one juvenile in addition to these.

Sept. 14 Strawberry Canyon, Alameda County.
0840. Flushed birds in Behavior Lab. pen while servicing instruments. Two juvenile ♂♂ identified, flushed separately from the main group. 0830 Observing birds from the hut - covey concentrated in E-10 brush pile. Noted 3 adult ♂♂ together. 0900 Ended observation, with birds having remained in E-10 corner the whole period -

W. J. Francis
1964

California Quail

Sept. 21 Strawberry Canyon, Alameda County. Quail in the Behavior Lab. pen remained very close in cover during observations from 0925 to 0945, this in spite of not having had food or water supplied for 4 days and water points having been completely dried up until filled this morning. Warm dry weather and strong gusty winds typify anomalous weather. 0946. Quail assembly calls (at least two birds) outside the pen, with no response inside

Sept. 24. Quail in Behavior Lab-pen again very quiet in cover when I came to replenish water + food on warm dry + windy day, from 0900 - 0930.

Sept. 27. Began observations in Behavior Lab. pen at 1820, birds soon began to stir and at 1835 all eleven came to center to feed, drink, and dust. One young ♂♂ still incompletely molted and easily distinguished. The five other males appear the same, one of them is a young bird with molt just about completed. The immature female was seen drinking appears fully molted but identified by light color

W.J. Francis
1964.

California Quail

Sept. 27. Strawberry Canyon, Alameda County -

of legs and lack of a band. 1845 the birds retreated to cover + continued to move about with coming into the open. 1851 First bird flew into roost in D-9, most of the others nearby. 1853 Green ♀ and the young ♀ foraging near instrument shelter in D-4, then after 1 minute one of them flew into D-4 eucalyptus roost. 1855 Orange ♂, the youngest ♂, and a ♀ came into same area. 1858 Two or three flew into D-9 roost. 1900 Green + another (young?) ♀ again fed + dusted near D-4 roost for a minute and then returned to roost. 1901 Two ♂♂ came up from E-9 to D-4 area, considerable motion in E-9 roost. 1907 Last bird in sight flew into roost. 1908 Two birds flew down from D-4 roost, then disappeared in cover.

Oct. 5. At Behavior lab pen. 0900 quail feeding in E-10 near brush pile, after having remained fairly close in cover after I had been in the pen 0830 to 0840. 0912 Birds back in cover without having come to fresh water + feed.

California Quail

Oct. 12. Strawberry Canyon, Alameda County.
0820 All 11 birds in the Behavior Lab. pen came to center clearing to eat and drink only 5 minutes after I filled water hole + put out feed. Natural food is apparently in rather short supply, and continued dry weather means drinking water requirement remains. 0825 All birds ran + flew to cover, no disturbance apparent to me. Dust bath has been much used, with many body feathers there. Molt of young birds is now complete and they cannot be distinguished from the adults with binoculars at 50 feet - except by lack of leg bands. Since light today is poor, it may still be possible to distinguish lighter legs of the immatures under better conditions.

Oct. 19. 0934. Covey in the Behavior Lab pen came running to center of the enclosure in a compact group, only 5 minutes after I left the pen, except for one ♀ (Green?) that remained in the background for about two minutes.

California Quail

Oct. 19. Strawberry Canyon Alameda County.
These birds came at once to the vicinity of the water hole, but fed on the grain I just put out before drinking. All, as far as could be determined took both grain + water. The birds were in one compact group, within the group all ♂'s were closer together than they were to the ♀'s. 0940. All 11 birds, 6 in the first group, followed by the other in about one minute, moved to the base of the B-7 eucalyptus, and for about two minutes engaged in a restless moving about, the group as a whole forming a rough circle, which rotated irregularly as the individual birds made short runs along the circumference. Each run had the appearance of the beginning of a chase, but although always near another bird did not seem to be directed at another. 0944. Covey wandered off into the usual cover along the lower fence.

Oct. 21. Birds in the Behavior Lab. pen remained quiet under cover of brush for 15 minutes after I put out fresh

California Quail.

Oct. 22. Strawberry Canyon, Alameda County
fed and water at 1000; at 1015 one ♂ began to forage toward the center clearing + two or three others moved around near the brush pile in E-10. 1027 This activity quickly subsided, and all birds are now concealed in the brush. 1029 Two ♀♀ and one ♂ foraging near brush pile in E-10, another ♂ perched in the brush. 1031 Quail ran back to the brush pile, no apparent disturbance. Ended observations.

Oct. 26. 0920 Count of 11 birds in the Behavior Lab. pen. Birds first seen in open A-10 corner, then alternating with brush in E-10 corner as they were disturbed by my presence in the pen.

~~Oct. 28. Light intermittent rain last night became ~~moderate~~ to heavy continuous rain this afternoon.~~

Oct. 31. Hunter Liggett Military Reservation, Monterey County. Checked hunters bags during the afternoon, this being opening day of the quail season. 98 hunters took

California Quail

Oct. 31. H.L.M.R., Monterey County.
154 adult males
85 immatures males
107 adult females, and
86 immature females;
also 10 unsexed adults and
one immature (wings only).
Additional unheaded birds brought
total to 448 birds for 98 hunters.

Nov. 2. Strawberry Canyon, Alameda County.
0825. Birds in Behavior Lab. pen
under cover in fog + rain; count of
11 when disturbed. 0845. Flushed
a covey of 20-30 quail in the patch
of dried thistle and hemlock just
outside of the quail enclosure.

Nov. 9. Two ♂♂ to center clearing
of Behavior Lab. pen at 0915,
less than 5 minutes after I left
the pen, feeding on grain just
put out! The rest of the covey
joined after 1 minute. 11 birds
counted. A short burst of mod-
erately heavy shower with gusty
winds had no effect at all on
their feeding. 0921 Six birds,
after sampling grain all over the

California Quail.

Nov. 9. Strawberry Canyon, Alameda County
cleared area, walked rapidly back to E-10 corner, followed by the other 5 one minute later. No social distinctions were noted, no sign of pairing or peck order.

Nov. 13. Birds in Behavior hab. pen were much more "jumpy" on this bright clear day after rain; the covey flushed into the air from E-10, and flew to E-1, rather than running up along the fence as usual; they then flew back again when I was in the opposite side of the enclosure, with practically no disturbance. All birds apparently are present, crippled female did not fly.

Nov. 16. 0830. All 11 birds present, apparently hungry in cold windy weather, as all came into the center clearing to feed on grain within 2-3 minutes after I returned to the hut after checking instruments. Still "jumpy" - when I sneezed inside the hut, all birds ran or flew to cover, over half taking to the air.

California Quail

Nov. 19. Strawberry Canyon, Alameda County

0910 All 11 birds left cover to feed on freshly scattered grain in the center clearing. Males tended to remain in a single group, females more scattered. 3 ♂♂ and 1 ♀ went to water hole; the former drank while standing in the water, the ♀ only walked through the pool. After 5 minutes feeding, all birds ran back to cover as heavy machinery outside the Behavior Station increased the noise level.

Nov. 30. 0901. Birds in Behavior Lab pen left cover in E-10 corner and ran to feed on grain which I had just scattered only 3 minutes after I had left the pen. All 11 birds present. Some tendency for segregation by sex, but groups are shifting as they feed. After 8 minutes of very active feeding, the groups wandered off into semi-cover; Orange ♂ perched on instrument shelter. Feeding continued at a slower pace.

California Quail

Dec. 11. Strawberry Canyon, Alameda Co.,
0820. Took following birds in trap
no. 2: Male # 18363.
Ad. Female, banded 58001
Female # 18381
Male # 18368
Ad. Male, banded 58002
Male # 56624
Ad. Male ~~#~~ banded 58003
Ad. Female, banded 58004
Ad. Male, " 58005

Dec. 12. 1620 Three birds in trap
#2, one escaped, others:
Ad. ♀ banded 58006
* Ad. ♂ # 18363.

Dec. 13. 1525 Took the following
birds in trap No. 2:
* Ad. ♂ # 18363
* Ad. ♂ # 18368
* Ad. ♀ # 58004
* Ad. ♀ # 58006

Dec. 14. 0840. Took 3 ♂♂ in trap
#2. one escaped, others:
* ♂ # 18368
* ♂ # 18363

California Quail

Dec. 14. Strawberry Canyon, Alameda Co.

1630. Took 3 birds in trap # 2:
* ♂♂ 18363, 18368
* ♀ 58006.

1655. Flushed birds in the Behavior Lab. pen from roosts when I re-installed hygrothermograph. Both D-4 and E-9 roosts were in use, more in E-9; only the crippled ♀ (yellow) identified, roosting in D4.

Dec. 27. Counted 11 birds in Behavior Lab. pen at 1235: 3 in E-10, incl. Green ♀; 8 in A-10, incl. almost all the ♂♂. 1245 all birds walked over to E7 and E8, then at 1250 began to forage into the center of the pen. 1252 As a large plane passed over, 5 birds ran to cover in D-4 and 6 to brush pile in D-9 a few seconds later, then all assembled in E-10.

W. J. Francis
1965.

California Quail

Jan. 2. Hunter Liggett Military Reservation, Monterey County, California. Checked hunter's bags from 1300 to 1700, with the following birds bagged by 18 hunters: Total - 50.

Adult males - 28
Immature males - 5
Adult females - 7
Immature females - 10.

Jan. 3. McMillan Ranch, San Luis Obispo County. Checked McMillan's quail records for the past season, with the following birds taken:

Locality	Ad ♂	Imm ♂	Ad ♀	Imm ♀	
Ranch	81	1	63	0	: 145
Other Shandon	86	5	66	5	: 162
Total Shandon	167	6	129	5	: 307
Orchard Peak	20	0	13	0	: 33
Sierra Foothills	31	22	24	20	: 97
Hunter Liggett	9	0	12	0	: 21

Grand total for season 458 birds.
(Detailed listing on page 1a these notes.)
Age ratio for Shandon Area:
4 immatures : 100 adults.

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